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CALIFORNIA CULTIVATOR

An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch.

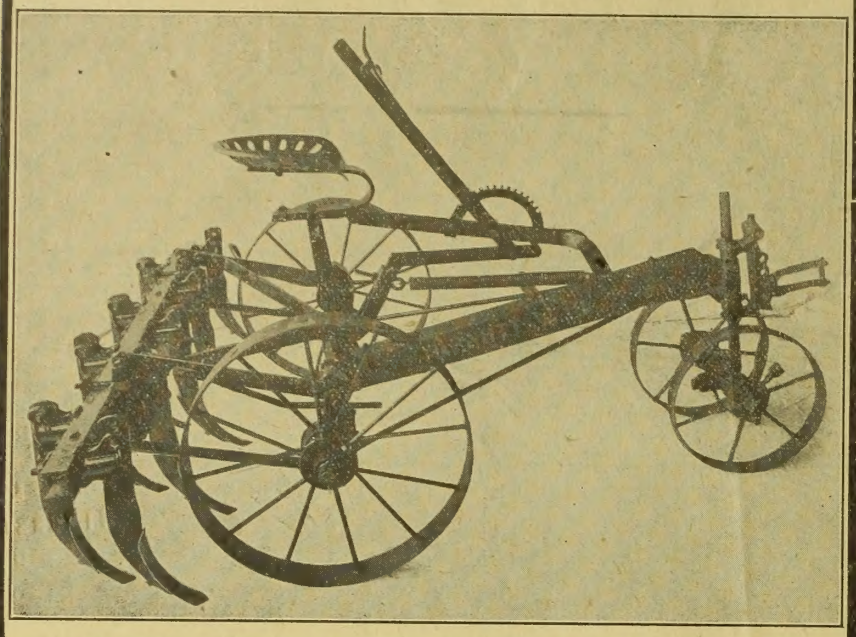
LOS ANGELES JULY 6, 1911 SAN FRANCISCO

Two Wealth Producers of the Imperial Valley

Brawley Cantaloupe Field at Gathering Time. Courtesy P. J. Hovley, Brawley.

Stacking Alfalfa at Brawley.

The Arnott Improved Orchard Cultivator



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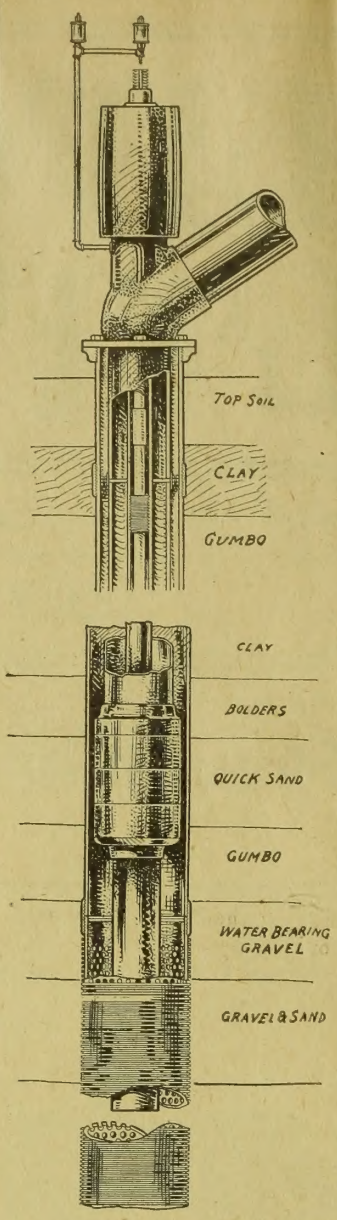

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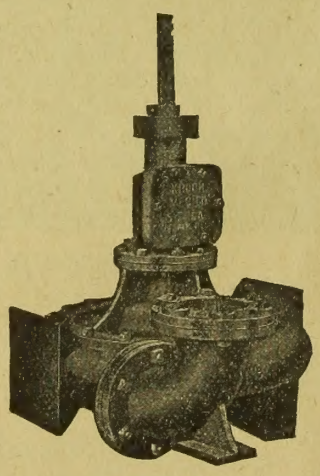

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California Cultivator

Vol. XXXVII. No. I. LOS ANGELES: THURSDAY, JULY 6, 1911 One Dollar the Year

Cantaloupe Growing at Brawley, Imperial County

Imperial Valley Recently Sent a Train of 130 Cars, One and One-Half Miles Long

While sitting in the office of the Bungalow Inn at Brawley, Imperial County, recently, I had a few moments' conversation with a man engaged in a very strange business. It consisted in the distribution of millions of bugs. The man was Mr. Frederick Maskew, connected with the office of the state horticultural commission. Mr. Maskew had in hand great quantities of Hipodamia convergens. These little insects with a large name had been gathered in the mountains east of Sacramento, in Placer County, by a force of men connected with the state horticultural commission, and forwarded to the Imperial Valley. This is the third year in which this work has been carried on and it has been an undoubted benefit to the melon industry. The little fellows are simply the ordinary yellowish-red lady-bug with black spots. When released in the field they proceed at once to attack the melon aphis, which has been the bane of the melon industry for some time. This year the aphis has not been so bad, but notwithstanding this the growers have received Mr. Maskew and his bugs with the greatest of pleasure because of past friendship for the bug. In this particular lot Mr. Maskew informed me that there were over eight millions of the insect. They are not dumped in the field promiscuously, but taken to the most desirable location in the field and the box or container opened to allow them to come forth as they will.

The use of bugs to kill bugs that are detrimental to fruit growing and farming has become an established feature in this state. Whether this gathering and distribution of Hipoadamia will be continued remains to be seen, but present indications are that the benefits are great enough to cover the cost.

As to the melon situation in the Valley, Mr. Maskew said that he had covered practically 144 square miles of the melon growing section from Rockwood south to Heber, and that he estimated there would be nearly 5000 acres of cantaloupes which would develop and be marketed. There are almost 3600 acres in the neighborhood of Brawley, which is indeed the center of the melon growing industry. The season is not so far advanced as last year by practically two weeks because of the continued cool weather. It requires the usual warmth of the Imperial Valley to give sufficient sugar and early ripening to a cantaloupe.

By courtesy of Mr. Peter P. Hovley, President of the Brawley Cantaloupe Growers Association, the writer was taken in his machine to the largest shipping shed in the Valley, a couple of miles south of Brawley, and it was indeed a sight to see the crates,

Continued on Page 16.

Septic Tank Construction on the Farm

Instructions as Given by the State Board of Health

Incorporated towns and cities are in a position to secure the advice and services of trained engineers to design their sewage disposal works, but the inhabitants of isolated residences, farmhouses and villages cannot always avail themselves of such technical knowledge, hence it is proper that some words of advice should be offered.

Sewage is the waste matter resulting from man's direction of the forces of nature for his benefit, and includes not only the natural human excreta, but also the wastes from the kitchen, laundry, dairy, and perhaps the stable and pigsty (or at least these latter should be included in the consideration of sanitary conditions). Practically all of these wastes are organic matter which must eventually be returned to the simple elements through the processes of decomposition and putrefaction.

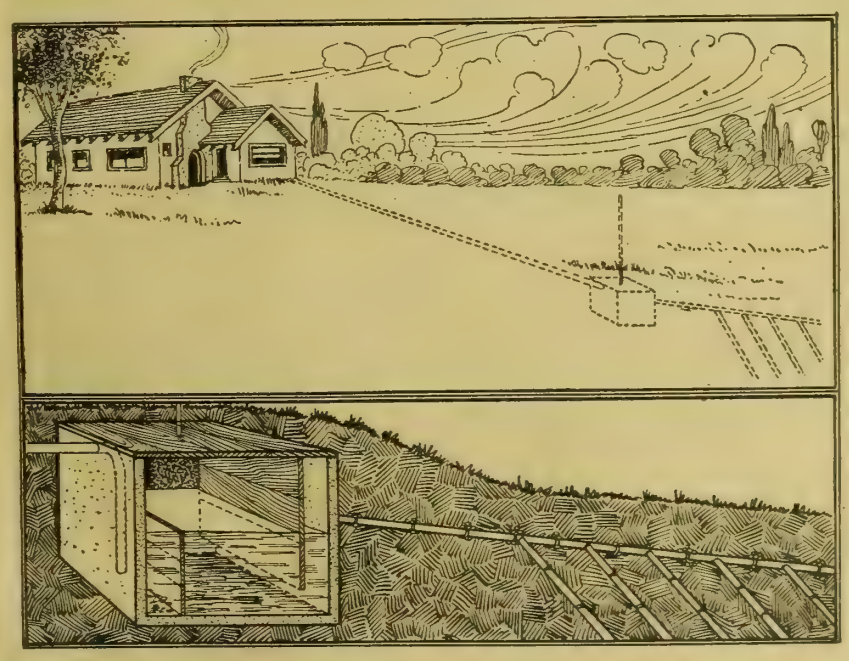
These decomposing processes are effected by the action of minute organisms, known as bacteria. The bacteria which we find so active in breaking down the organic matter in sewage are of two kinds, "aerobic" and "anaerobic." The aerobic, as indicated by the name, thrive and perform their functions in the presence of air and light. They are the cause of the putrefaction of dead animal matter as we see it in the open air, the decomposition of which causes such offensive odors. The anaerobic bacteria (designating organisms that live in the absence of oxygen) work in the dark and away from free air, breaking up the particles of organic matter and dissolving them into their original elements.

It has been found that where sewage is collected in a tank where proper conditions obtain, after a few hours the anaerobic bacteria have attacked the solid matter and separated the constituents. The inorganic matter falls to the bottom while most of the organic matter is dissolved into fluid and gaseous forms. That which has not been dissolved is broken up into fine particles and held in suspension in the liquid. A "scum" forms on the surface of the liquid in the tank which soon becomes dense enough to shut out light and free air. As these conditions become established the anaerobic bacteria acquire their greatest activity. The period required for maximum effect varies with the quality of the sewage, temperature, and other conditions, and ranges from, say, six to twenty-four hours, but eight to sixteen hours is the usual time for ordinary house refuse.

Any person may obtain a quotation in his own community on the materials listed below. To this estimate he has only to add the cost of labor. Cut "A" shows the general arrangement of a septic tank in relation to a farm house or country residence. It also shows the subsoil irrigation method of disposing of the effluent. Cut "B" shows a scale drawing of the septic tank.

Bill of Material for Construction of Septic Tank.

For Concrete Tank—1 bbl. cement, 52 lbs. hydrate of lime, 57-100 cu. yd. sand, 86-100 cu. yd. broken stone, 1 1x12in.x18ft. lumber, 1 piece 1x8in.x10 ft. lumber, 2 pieces 1x12in.x10ft. lumber, 2 pieces 1x12in.x14ft. lumber, 2 lengths 2in.x2ft.6 in. wrought iron pipe, 1 4in. elbow, 1 1x6in. brass nipple, 1 1in. elbow, 1 length 1in.x3ft.3in. galv. iron pipe, 1 1x3in. galv. iron nipple, 1 3x3x⅜in. floor flange (¾in. threaded hole), 8 ft. ¾in. vent pipe, 1 galv. iron weir (see sketch). Form Lumber: 4 pieces 2x4in.x4ft., 4 pieces 2x4in.x4ft.4in., 16 pieces 1x12in.x4ft., 8 pieces 1x12in.x4ft.8in., 8 pieces 1x12 in.x5ft., 2 pieces 1x4in.x4ft.8in., 2 pieces 1x4in.x5ft., 2 lbs. 10d nails.



Plan for Location of Tank.

For Wooden Tank Box—4 pieces 2x4in.x4ft. plank, 22 pieces 1x12in.x 4ft.4in. plank, 14 pieces 1x12in.x4ft. plank, 2 pieces 1x6in.x4ft. plank, 2 pieces 1x8in.x4ft.4in. plank, 2 pieces 1x6in.x4ft.4in. plank, 2 pieces 1x6in.x 4ft.4in. plank, 2 pieces 1x8in.x4ft. plank. Inside walls and top: 1 piece 1x12in.x18ft., 1 piece 1x8in.x10ft., 2 pieces 1x12in.x10ft., 2 pieces 1x12inx14 ft.

Note:—All the above lumber to be of redwood.

The action, called "septic," does not completely dissolve the matters contained in the sewage, but under proper conditions should destroy 40 to 60 per cent of the organic matter, leaving the remainder suspended in a fine divided state. The effluent from the tank will, therefore, be putrescible and if exposed to the air in stagnant bodies will soon become offensive. To avoid the offensiveness the effluent is disposed of by turning it into streams of running water which is a dangerous practice, or by using it for irrigation, either on the surface or in subsurface tiles, (Subirrigation is not successful, however, unless the soil is of a sandy nature) or by further treatment. This further treatment consists in spraying the liquid effluent from the tank out through the air over "contact-beds" prepared of rough rocks and coarse gravel. The purpose of this process is to get the effluent aerated and in contact with the "aerobic" bacteria.

When properly constructed none of these methods need require much ex-

(Continued on Page 23.)

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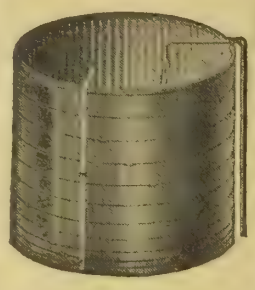

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THE AUSTRALIAN ORANGE TREE.

By Chas. R. Paine.

By invitation of Chas. A. Dewey of Upland I visited a few days ago orchards there in which he is working to transform the so-called Australian navel orange trees to true Washington Navels.

The character of the former sort, seen here and there in a grove of the latter, is distinctively marked by greater dimensions both in height and breadth and by more openness of the branches which extend upward obliquely, contrasting with the pendent tendency of the branches of the true navel orange tree. The foliage also is distinctive.

A feature of many trees, supposedly of the regular navel type, he pointed out, was to have, in some cases, the topmost branches of the Australian type; in others, in addition to the modified top, an extension of this sort of branch and foliage to branches next below; again, other trees would show the change still lower down, and unless such change from the true type was arrested, the whole tree would become the well-known Australian orange tree, produced, not from bud variation in the original nursery form, but by deterioration in orchard growth from what was at first the regular desirable variety.

His contention is that this is the tendency of the Washington navel orange tree. He finds that when observation of a certain orchard, for instance, is made, a limited, definite number of such inferior trees (Australian) may be found by anyone at all acquainted with orange culture; in these trees rebudding may be done and the tree be changed to the normal kind. Later, to the surprise of the orchardist, several other trees of the objectionable sort may be discovered, and after very careful observation to make sure that all are included, he rebuds the second lot; again, after a further interval, more Australians appear and he is forced to conclude that a change in the character of the trees is going on, not merely that change indicative of age, but an active, vigorous growth different from that which belongs to the Washington Navel, bearing fruit of an inferior quality.

He was working at the time of my visit in an orchard of large old trees, rebudding those which were wholly Australians, and cutting out from other trees all those parts which had taken on the Australian type, having learned by long and close observation the features of branch and foliage indicative of the changed condition; sometimes it would seem to a bystander that he was destroying branches of the regular sort.

The deterioration from the Washington Navel to the Australian is brought about, he observes, by limbs growing upright or nearly so, originating as suckers on the trunk, and growing above the pendent branches, such limbs ultimately dominating the tree.

His theory is, though I did not get an exact expression of it, (and I mingle my own view with his to form a theory) that the upright strong growing branches by their leaves elaborate a plant food of a peculiar quality which, supplied to the other parts of the tree, changes them in wood and foliage, in the course of years, to a likeness of the upright growth of the so-called Australian navel orange tree, unscientific, probably.

I have not myself observed such changes of type gradually proceeding, nor noted an increasing number of Australians from year to year; had I formed the habit, as I should have, of rebudding all trees of inferior fruiting qualities, I should be in a position to know personally the truth of this matter.

This is true, however, as all orchardists know, that sucker growth, in the early years of its fruiting, especially, bears fruit of a thicker skin and coarser texture, corresponding with the rankness of the growth of the wood, and that such growth if it comes from the trunk becomes the strongest part of the tree and overhangs and dominates the proper fruiting wood; and, if it comes from a branch, it weakens and ultimately destroys that branch.

For the sake of maintaining high quality of fruit there is no doubt that such growth should be kept down, and that only pendent branches should constitute the tree to be at its best as a profitable fruit tree. To this end it is important that young orange trees should be allowed to increase in size chiefly by the slower formation of small fruiting branches instead of sucker growth, or even upright growth on the branches.

If due attention is given to these particulars in all stages of orange tree formation, such a condition as Mr. Dewey finds could not result, unless, as is commonly thought, the original bud, a mutation, is at the bottom of the tree form and character called Australian.

The highest type of the navel orange tree found by Mr. Shamel of the Department of Agriculture in the orchards of the National Orange Company at Riverside is composed wholly of pendent branches so growing and fruiting that the openness of the down-hanging limbs permits a large proportion of the fruit to form inside.

To make an opening by way of the top into the interior of orange trees in order that growth of fruit wood may take place where long stretches of limbs in old trees have been bare, or the abiding place of dead brush, or the home of suckers, also has the effect of keeping in abeyance the vigorous upright growth which Mr. Dewey finds is detrimental to the character of the tree as a whole and to its fruit.

On his own home lot in Upland he showed me trees which, he said, had the Australian tendency; these he had treated three years before, not by rebudding. These trees are now of the normal rounded form entirely free from growth of sucker origin. The tops, however, are entirely closed, and they are, in consequence, fruiting but little within.

Mr. Dewey's work in Upland and Pomona is quite extensive in altering trees, and of much interest, and worthy of investigation. If it teaches no other lesson than the value of regulating the growth of the branches so as to secure better quality of fruit, it is worth while.

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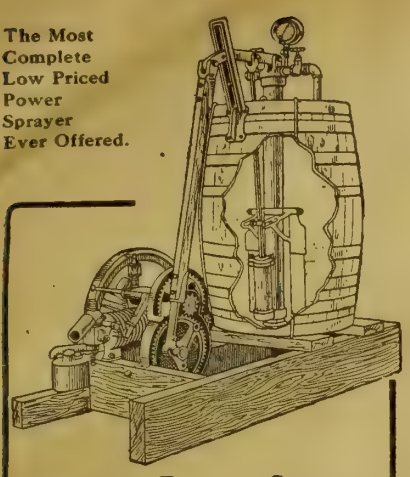

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FERTILIZER REMOVED BY ORANGE CROP.

In order that we may fertilize intelligently we should know the amounts of the fertilizing elements which are removed from our soils in the fruit we send away. A further knowledge of the nature and behavior of our soils is required to guide us in this respect. Finally we should make due allowance for the plant food that is lost through leaching.

We find that in an average crop of 300 boxes of 80 pounds each, per acre, there are removed from the soil 34.4 pounds of ammonia (equal to 28.3 pounds of nitrogen), 12.7 pounds of phosphoric acid, and 70.3 pounds of potash.

This loss could just be supplied by 138 pounds of sulphate of ammonia (analyzing 25 per cent), 79.5 pounds of acid phosphate (analyzing 49 per cent), and 143.5 pounds of high-grade sulphate of potash (analyzing 49 per cent).

The fertilizing constituents removed in the fruit do not represent the total loss of plant food from the soil. We must take into consideration two other sources of loss: the material used in the production of new wood, leaves and roots; and that lost from the soil by leaching.

The following is the number of pounds of ammonia, phosphoric acid, and potash, in 1000 pounds of leaves and 1000 pounds of wood. In the leaves are 8.5 pounds of ammonia, 1 pound of phosphoric acid, and 4 pounds of potash; in the wood there are 8.5 pounds of ammonia, 5 pounds of phosphoric acid, and 7 pounds of potash. As may be seen, the tree draws most heavily upon the ammonia and potash. However, after the tree reaches maturity the loss of plant food from the soil due to formation of leaves and wood would be relatively small.

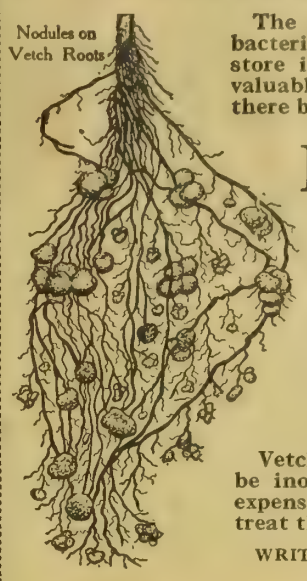
The loss by leaching falls most heavily on the ammonia, and is greatest when applications of nitrate of soda are followed by heavy rains. In open sandy soils the loss of phosphoric acid and potash must also be considerable. Should we have a continuous heavy rainfall—say 4 to 6 inches — soon after fertilizers have been applied, much more of plant food would be leached out, and carried beyond the reach of the roots, than if this same amount of rain had been distributed over a period of several weeks. On groves where we have a cover crop established during the rainy season, the loss would not be so great as it would where clean culture is the rule; since the network of roots would tend to check the downward movement of the water.

It is impossible to form an accurate estimate of the loss from the last two causes; but that more or less is sustained is evident, and it must be taken into consideration when we decide upon the quality of fertilizers to be applied. No doubt in many cases this loss could be reduced without harm to the crop by a judicious use of more humus-forming materials, and thus the cost of fertilizing would be lessened.

An average crop of cotton consisting of 200 pounds of lint and 654 pounds of seed per acre would remove from the soil 25.3 pounds of ammonia, 6.8 pounds of phosphoric acid, and 9.9 pounds of potash. Nearly all this is in the cotton seeds, there being only 3.3 pounds of fertilizing ingredients in the 300 pounds of lint. It is assumed that the body of the plant is returned to the soil. It is apparent that the orange crop draws much more heavily upon the soil than does the cotton crop.

Analyses of eleven varieties of Florida oranges show that every ten boxes, of 80 pounds each, contain 1.2 pounds of ammonia, (equal to .96 pounds of nitrogen), 4 pounds of phosphoric acid, and 2.32 pounds of potash. With these figures at hand it is easy for us to calculate the amount of fertilizing constituents removed per acre in a crop of any size.—Florida Agriculturist.

Fertilize With Air



The nodules on these roots are colonies of bacteria that suck the nitrogen from the air and store it in the plant, which then becomes a valuable fertilizer. The bacteria were placed there by inoculating the seed with

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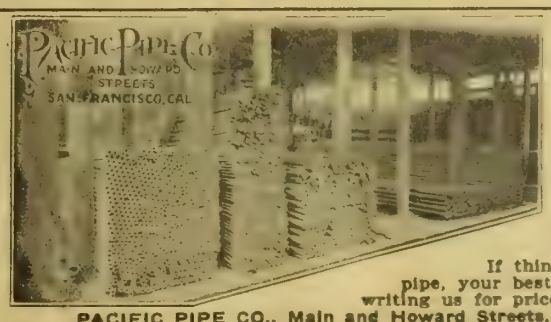

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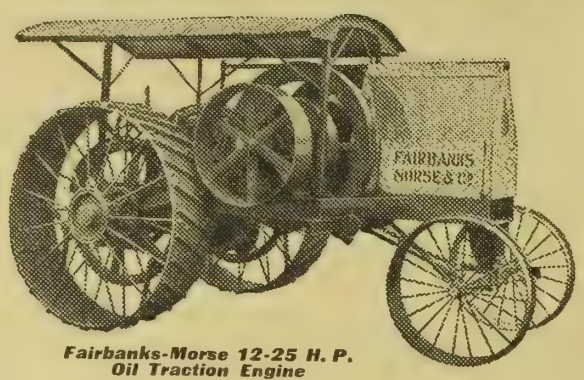


Fairbanks-Morse 12-25 H. P. Oil Traction Engine

The Simplest, Most Durable and Easily Handled Traction Engine on the Market

The drawbar pull of this engine is equal to 12 horses. When used as a belted engine, 25 H. P. can be developed. It is well adapted to Threshing and Hay Baling.

Our 30-60 Horse Power Oil Traction Engine will be ready for delivery October 1.

Write For Catalogue LA 37

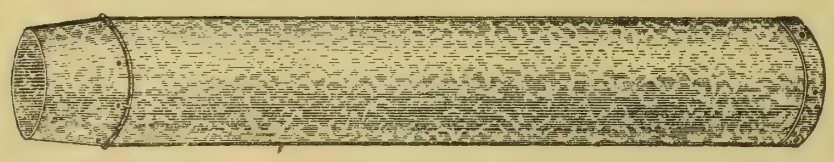
Our 2-cylinder, 4-cycle Engine will operate on 3-cent distillate, as good as with the best gasoline.

FAIRBANKS-MORSE & CO.

Makers of the Well-Known Fairbanks Standard Scales

425 East Third Street, Los Angeles, Cal.

Is Your Mode of Irrigation Satisfactory?



If not (not considering the cost of your water), give your trees a chance to make good by giving your orchard the proper amount of water all over same, and not three-quarters of your water supply within forty feet of your head flume.

The surface irrigating pipe we manufacture will remove this obstacle—will cut your water bill—is more convenient to use and will last a life time.

Write us, stating your requirements and we will cheerfully furnish you with prices and information desired.

We also manufacture Ells, Tees and Gates for this special pipe and are in a position to manufacture any special fittings you may require.

THE AMES IRVIN COMPANY Corner Eight and Irwin Streets, San Francisco, California

Coronado Tent City

A Resort for the Particular—Offers the Best of Attractions—Now is the Time to Come.

Comfortable-Reasonable-Restful and Healthful

Ohlmeyer's Famous Coronado Band Fresh From its Eastern Triumphs

Safe Surf Bathing—no undertow
Children's Play Ground and Bathing Pool
Joy Ward and $30,000 Dance Pavilion

HUNDREDS OF PALM TENTS AND PALM COTTAGES—with every Convenience.

Write for rates and descriptive booklet

JOSHUA S. HAMMOND, Manager Coronado Tent City, Coronado Beach, Cal.

DAISY FLY KILLER

placed anywhere, attracts and kills all flies. Neat, clean, ornamental, convenient, cheap. Lasts all season. Can't spill or tip over, will not soil or injure anything. Guaranteed effective. Of all dealers or sent prepaid for 20c.
HAROLD SOMERS
150 De Kalb Ave.
Brooklyn, N. Y.

2 in. Pots For Sale 2 in. Pots

2nd hand pots in good condition $3.50 per 1000.

Chas. Howard Hemet, Cal.

Deciduous Fruit Culture

DISEASES OF ECONOMIC PLANTS.

Always up-to-date in the publishing of the latest and best pertaining to agriculture the MacMillans are now out with "Diseases of Economic Plants," written by F. L. Stevens, Ph. D., Prof. of Botany and Vegetable Pathology of the North Carolina College of Agriculture, and J. G. Hall, M. A., Assistant in Vegetable Pathology North Carolina Agricultural Experiment Station. The book is published at $2.00 net ,and is a most valuable reference book for any library. In the Preface it says:

"Students of plant disease are naturally divided into two categories. First, those who wish to recognize and treat diseases, without the burden of long study as to their causes; second, those who desire to study the etiology of diseases, and to become familiar with the parasites which are often their cause.

"The present book is designed to meet the needs of the first of these two classes of readers. It indicates the chief prominent characters of the most destructive plant diseases of the United States, caused by bacteria or fungi, in such a way that in most cases reliable diagnoses may be made, though it must be recognized that in some cases certainty cannot be had without recourse to microscopic details. Information is given regarding the best methods of prevention or cure for these diseases."

The Introductory gives the subdivisions of plant pathology as follows:

"1. Those caused by cryptogamic parasites, fungi, bacteria, and slime molds.

"2. Those caused by parasitic flowering plants.

"3. Those caused by animal parasites, insects, worms, etc.

"4. Those due to adverse inanimate environmental conditions, light, water, soil, nutriment, etc.

"5. Physiological diseases due to other internal derangement."

The history of the science of plant diseases is the first feature of the book, even going back so far as the Old and New Testaments in which blights and mildews are referred to. Aristotle's reference to them 350 B. C. is mentioned. These, of course, are merely interesting statements given in shortest of space; more particular attention is given to the development of the last half century. A photograph is shown of Millardet, father of the Bordeaux mixture, and in connection is an illustration of "An improved brush for distributing Bordeaux mixture." A valuable chronology of important events in plant disease history is added.

Ground disinfection is given several pages. Referring to peach leaf curl the book states: "Throughout the peach producting regions this disease abounds, being particularly injurious in moist localities. The annual loss by it in the United States approximates $3,000,000.

The book treats of practically all diseases which have visited the agriculturists of the Pacific Coast; blue mold of the orange, brown rot of the lemon, and other familiar troubles are given due space.

We can take a little exception to the walnut blight feature of the book, it states that this causes the loss of 50 per cent of the crop of the Pacific Coast, to which it is peculiar. A short description is given, then a short paragraph which says: "Two treatments with Bordeaux mixture, after thorough removal of diseased parts, have been known to prevent 50 per cent of the loss. The second spraying should be given when the nuts are firmly set. Care should be taken to select resistant trees for propagation.

The last sentence of this paragraph is entirely correct, but if any walnut grower has been able to prevent 50 per cent of his loss by the use of Bordeaux he is yet to be heard from. However, in justice to the authors we will say that a foot note puts the responsibility for this statement on the "U. S. Dept. Agr. Year Book, Page 98, 1904."

All told, it is an excellent book which the Cultivator office will supply to its readers or it may be had by addressing The Macmillan Co., 56 Fifth Ave., New York.

GATHERING COTS.

In an exchange we note the following which may be of value to apricot growers who gather for drying.

Three men working together, two of them using fish poles, cut off at the tip to about the size of half an inch, with hooks attached, made of half-inch oval iron, with four inches of it turned into the hook, the oval side on the inside of the hook, which is lashed on the pole with a strong cord, with melted asphaltum poured on it to prevent it from slipping.

To use the poles, hook on the limb and pull down slightly, with short jerks—or quiver—this will remove the ripe fruit but not the gren. Place two sheets, made of heavy drilling 12 feet wide by 24 feet long, one on each side of the tree. After shaking the fruit onto the sheets two men take hold of the corners and roll the fruit to the center, then each of the two men go to the middle of the long way of the sheet and raise it up in the center sufficiently to make the fruit roll out when the third man places an empty box at the end and pulls the sheet tight so the fruit will roll into the box. When both sheets are emptied two men take hold of the two corners and turn it bottom side up, which empties the leaves and sticks on the ground ready for the next tree. It is a good plan to distribute the empty boxes between every other row of trees so the third man can get them handily.

MAKING CIDER ON THE FARM.

Good cider can be made on the farm in small or large quantity without much apparatus, but as a matter of fact it is seldom so made. The reason for this is lack of attention to details. Only good fruit will make good cider. It is not worth while to waste effort on poor, unripe fruit, or on early fruit with thin acid juice weak in sugar. The finished product will never be better than what one starts with. Unmerchantable grades of our very best table fruits should be used for home-made cider. Some of the crabs showing good sugar content, as Maiden Blush and occasionally a good seedling apple, make the very best cider, because of the tannin found in them.

The fruit should be clean and free from rot. To use unclean or decayed fruit simply invites bad fermentation. If one puts into the cider all sorts of germs found on soiled, dirty and decayed fruit, he should not expect good

results. The fruit should be carefully pulped when it is cool, the juice expressed as quickly as convenient and put at once into clean barrels. Great care should be used in selecting a grinder. Proper machinery will recover four gallons of juice per bushel. Mills made with stone rollers will crush the fruit so that four gallons of juice can be recovered by hand.

Having secured the juice, a proper barrel is all-important. For drinking cider, use only perfectly clean alcohol or whisky barrels. Never use a barrel that has contained cider or any other liquors than those mentioned above. An old cider barrel cannot be properly cleansed. Barrels should be thoroughly scalded with boiling water and washing soda, then rinsed clean with cold pure water. Put the barrels, if possible, in a room where the temperature will be fairly constant at 60 per cent to 70 per cent. Lay flat, and fill with juice to within ten inches of the bung-hole. Cover the bung-hole carefully with clean cotton, so as to exclude the entrance of germs and vermin. This cover readily permits the gases to escape. Never allow it to touch the liquor in the barrel. It is a great mistake to allow the barrels to foam over, as all sorts of germs enter under such circumstances and destroy the cider.

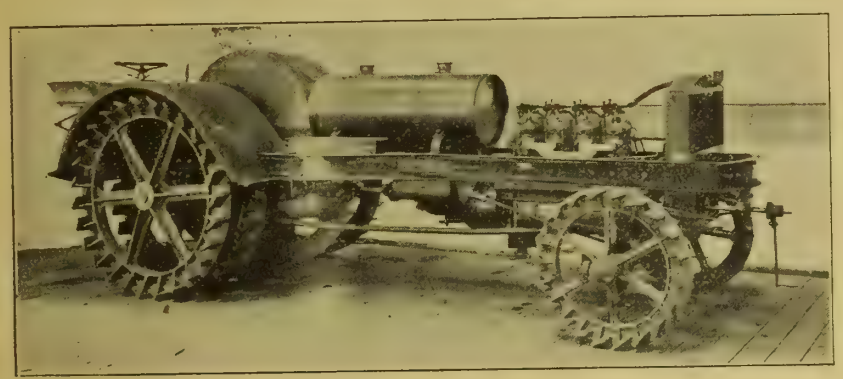
As soon as the juice is in the barrels, put into it a cupful of good yeast or, what is better, a pure culture of special cider yeast. This sets up the alcoholic fermentation at once and largely cuts off the development of harmful organisms. Fermentation will be more rapid by this method. After three days, raise the cotton and note the condition of the head on the cider. It should become thick and turn dark as the first fermentation is completed, but one cannot predict with certainly what will happen in this regard. As soon as the liquor becomes comparatively quiet after this fermentation, it will be found fairly bright and limpid. It should then be racked off into a perfectly clean barrel and every care observed not to carry over any of the lees. This barrel should be kept at a temperature of 55 to 65 degrees. The bung-hole must be carefully guarded as before. A second fermentation will now set in, and as soon as it subsides the barrel can be tightly bunged; if kept in a cool cellar, the cider will keep for several months.

No liquor of such low alcoholic strength as cider will keep if exposed to the air, and air and vinegar germs will find entrance sooner or later. If one is not afraid of using chemicals, one can treat each barrel with about 2½ ounces of benzoate of soda and keep the cider for a long time for further change. It is far preferable, however, not to use chemicals, but to watch the cider as fermentation progresses, and when it shows specific gravity of 1.004, rack it free from lees into sound, clean wine bottles, cork tightly and store in a cool cellar. It is always best to tie the corks down. The bottles should be laid flat. There will still be some slight fermentation, which will render the cider sparkling and agreeably gaseous. Good cider, cleanly made and preserved in bottles, is a most wholesome refreshing drink, and especially to be recommended for dyspeptic and gouty persons. I have drunk bottled cider twelve years old. I make this for my own use. Of course when made for vinegar, so much care is not taken.—Country Gentleman.

A POWERFUL TRACTOR AT LOW COST

You Need It Your Neighbor Needs It Everybody Needs It

Simple in Construction — Easy to Operate



This 30-Horse Power Tractor

is especially adapted for ***General Farm Purposes.*** Pully for Pumping, Sawing, Threshing, or any and all power purposes is attached on shaft where crank is shown.

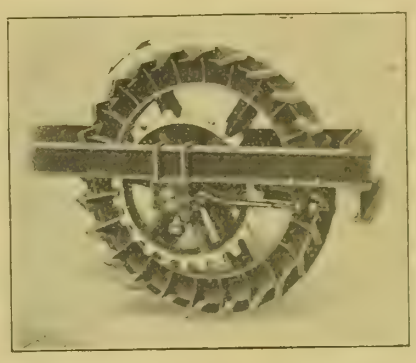
Mr. Farmer:——Mr. Orchardist:

You will agree with us that the better you can till the soil, and till it when it should be, which is usually when it is too hot to get best results with the horse, the greater your profits will be. ***Have You Stopped to Consider*** what it costs to plow, cultivate, etc., with high-priced horses, working them 90 days and feeding them 365. True, until the present you have had no alternative, but the ***Johnson Tractor*** is especially designed to meet the requirements of the farmer and orchardist.

We call special attention to our

Tractor Wheel

which gives the greatest possible traction, does not clog, slip or ball up, and no possibility of shaking to pieces like a built-up wheel, and, best of all, does not pack the soil.



Our Tractor Engine is constructed throughout of the very best material and every part is thoroughly tested before being assembled.

We Want to Tell You More About This Powerful Engine and Show You How It Will Earn You Money. Our Catalogue tells a Story Full of Facts and Figures of Living Interest.

We know you will find this Tractor the most convenient, practical and economical power to be had for any and all farm purposes.

Be Sure to Send for It. Mailed Free. Write Today. Address

Johnson Tractor Co., Sunnyvale, California

Farm Land to Rent

at $5.00 per Acre, or One-Quarter Share

First-Class, Level Land, Suitable for Grain, Alfalfa, Vegetables or any Other Crop. One Acre Produced 15 Tons of Onions.

Water in Abundance from Artesian Wells

That Flow 100 to 150 Miner's Inches Each

Located 7 to 12 Miles Westerly from Wasco and Elmo on Santa Fe R. R. in Kern County, California

10,000 Acres will be leased with option to buy at $100.00 per acre when option is desired, in tracts of any size required by tenants. Residents on the property will be given preference of employment on improvement work and farming to be done by the Company.

INVESTMENT

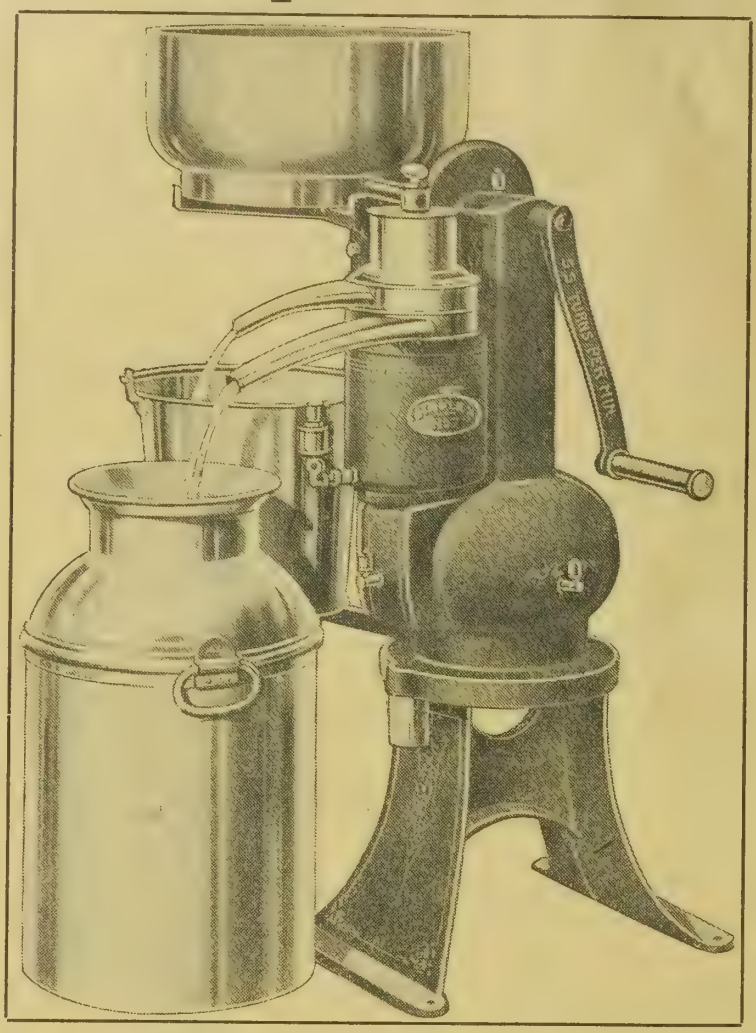
Treasury Stock of the Company at par, $1.00 per share, based on a valuation of $50.00 per acre, can be purchased for cash or on time, cash to go into improvements. This is **the chance** if you are looking for a land investment. Write for particulars.

Address
Herbert E. Carse, Cons. Engr.
General Manager

Kern Meadows Land & Water Company

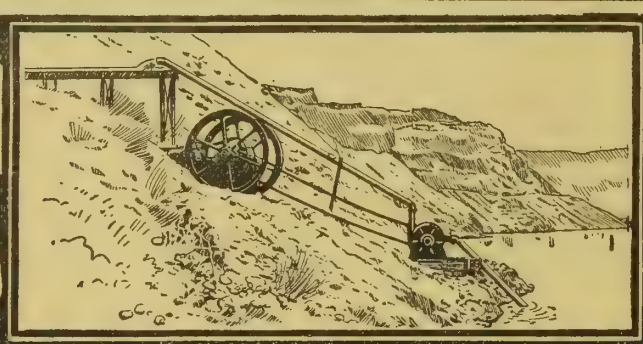
Room 222, Security Bldg., Los Angeles, Cal.

Simplex Cream Separator



If you are in the market for a Cream Separator ***write us.*** We have all sizes and styles, also a few good second hand machines. We carry a full line of Creamery Supplies.

O. J. WEBER 225-227-229 East 6th St. **Los Angeles**



Have Your Own Independent —Water Supply System—

SOIL that will yield crops with a meager supply of water can often be made to yield two or three times as much with plenty of water. Government experiments have proved this beyond a doubt. Just think what this means—more crops—better crops—the choice of crops—all within your reach with the help of an

I H C Gasoline Engine

It will guarantee you a sure water supply—in fact a water supply that is even better than rain as you can have as much water as you need at just the right time. You won't have to wait for rain and watch your crops dry up in the field. An I H C engine is dependable and the cost is so small in comparison to what you can make that the extra profits the first year will often pay for it. In addition to your irrigating this same engine can be used for general purposes.

I H C engines are the most efficient and economical power known for pumping, grinding, and other farm work and are made in so many sizes and types that you can get just the engine you want for your special needs.

Vertical type—2, 3, 25, and 35-H.P.; horizontal—1 to 25-H.P.; semi-portable—1 to 8-H.P.; portable—1 to 25-H.P.; traction—12 to 45-H.P.; sawing, pumping, spraying, and grinding outfits, etc. Built to operate on gas, gasoline, kerosene, distillate, or alcohol—air-cooled or water-cooled. See the I H C local dealer, or, write nearest branch house today for our new catalogue.

I H C Service Bureau

The Bureau is a clearing house of agricultural data. It aims to learn the best ways of doing things on the farm, and then distribute the information. Your individual experience may help others. Send your problem to the I H C Service Bureau.

WESTERN BRANCH HOUSES—Denver, Col.; Helena, Mont.; Portland, Ore.; Spokane, Wash.; Salt Lake City, Utah; San Francisco, Cal.

INTERNATIONAL HARVESTER COMPANY OF AMERICA
Chicago (Incorporated) U S A

Live Stock and Dairy

Dairymen and stockmen are requested to write of their experience. Mrs. Sherman is always willing to answer queries and this, with experience of other workers, will make this department of greater value.

THE REGISTERED BULL.

A Tennessee subscriber asks if we will give him some concrete facts as to the superior selling value of those cows that have been sired by a registered dairy bull. Fort Atkinson is situated in Jefferson County, Wisconsin. This county is noted for its Holstein and Guernsey cattle. The yearly sales of cows and heifers, both registered and grade, mostly grades, amount to nearly $700,000. Parties come here from distant states and pick up these cattle by the carload. From this city alone 350 carloads were sent out last year. Now, the value, in the minds of the buyers of these cattle, is their breeding. No one comes here to buy natives or scrub cattle. High prices are sometimes paid for very desirable grade cows.

One farmer who had been very particular about the quality of the bulls he used, sold, last fall, seven grade Guernsey cows to an Iowa buyer for $125 each and he would not have taken this price even, had it not been that he wanted to dispose of his grades to make place for a lot of registered heifers that were coming on. The seven cows thus disposed of averaged over 350 pounds per cow a year, of butterfat at the creamery.

While this is an exceptional case it shows what value a highly bred dairy bull will put into grade cows when the breeding is united with skill in selecting and feeding. Taking them as they run we will say that grade cows and heifers sell here for from $15 to $25 more than ordinary native cows will bring.

The problem is a plain one. The buyers come to this and other counties in Wisconsin to buy these cattle because so many of the farmers have had the good dairy and commercial sense to buy and use registered bulls. But the bull cannot do it all. The farmer must use additional good dairy sense in feeding and developing the heifers, so that they will make good cows. The cow must have a fair chance when a calf and up to and through her first milking period, to develop the qualities her sire has given her. There are too many short sighted farmers on this important point even in this great dairy section. As a rule they are men who read and study the cow question but little, thinking that "main strength and awkwardness" will do the work. But they are not the farmers who get the best prices for their cattle even though they may use registered bulls.

Another prime cause for the rearing of good dairy cattle here is the fact that most of the milk of our cows goes to creameries, either in the form of whole milk or cream separated on the farm. This gives an abundance of skimmilk with which to rear the calves. There is no other way as good to rear good heifers that will make good cows.

And further, those farmers that stick to the creamery and produce these high-priced heifers and cows make the most money. They make it in three ways:

1. By keeping planty of young stock on the farm, the manure supply is greatly increased and the producing power of the farm is better kept up.

2. In raising a yearly supply of heifers from good bulls they supply their own herds with much superior cows, thus greatly increasing their milk product. There is no denying that a heifer well raised on the farm will make a better cow than one bought outside.

3. In the sale, at good prices, of the surplus heifers and cows.

This constitutes the ideal dairy farming, both for the sake of the farm, and its fertility, the final cash profit to the farmer and the general prosperity of the community. As will be seen, the whole is based upon the use of the well-bred, registered bull, and his reflex effect upon the mind and development of the farmer. The production of well-bred farm stock calls for farmers of active brain, who see things in their right light and meaning and who keep up their mental power as well as the quality of their herds.—Hoard's Dairyman.

SUCCULENCE AND SILOS.

It is essential for large yields and economical results that some succulent foods be given the herd during the winter months. This can be supplied either through the use of root crops or by using silage from different sources. Roots are a useful form of succulence, but the cost of labor necessary to grow them precludes their general use in this country.

In view of the fact that corn yields digestible dry matter more abundantly, with a reasonable expenditure of labor, than any other plant, its use in the form of silage is general. Corn silage is especially suited to all intensive operations where it is necessary to supply as many animals as possible on a small amount of land. Like the plant from which it is made, corn silage is carbonaceous, yet its succulence stimulates milk secretion to a marked degree, and its generous use in winter is the best way to approach ideal summer conditions.

Clover, alfalfa and cowpeas may be fed in the form of silage, but their use in this manner is not common. If the planting of cowpeas is so timed that they will reach maturity when the corn crop is ready for the silo, one load of green peas to two loads of corn will make excellent silage and overcome the risk and labor of curing the cowpea hay. The silo is a necessary part of the equipment of any well-regulated dairy farm, and its value is highly appreciated by feeders of all forms of live stock. No dairyman who has ever made and fed silage properly would forego the advantages offered by it.

They contend that it is essential to success. Too much cannot be said by way of inducing farmers to use silos more extensively. Instead of wasting one-third of the nutrients of the corn crop each year by allowing the clover to waste in the fields, the whole crop should be converted into silage and fed to dairy cows in well protected stables and yards. The returns from the increased production of milk would add millions of dollars annually.

Cream Separators, all sizes and prices. O. J. Weber Co., 225-227-229-231 East Sixth Street, Los Angeles.

Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 225-227-229-231 East Sixth Street, Los Angeles.

Warranted to Give Satisfaction.

Gombault's
Caustic Balsam

Has Imitators But No Competitors.

A Safe, Speedy and Positive Cure for

Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

As a Human Remedy for Rheumatism, Sprains, Sore Throat, etc., it is invaluable.

Every bottle of Caustic Balsam sold is Warranted to give satisfaction. Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address

The Lawrence-Williams Co., Cleveland, O

No Hoof-No Horse

Statistics show that 80 per cent of all horses are lame, and that 80 per cent of the lameness is caused by hard and contracted feet. Especially is the dry season in this section very hard on hoofs. As a hoof softener, toughener, nourisher and grower there is nothing equal to

Eshelman's Wool Fat Hoof Healer

A horse's hoof is from 60 to 70 per cent water. Grease and water will not mix. There is no grease about Wool Fat. It mixes readily with water, is very penetrating, and while a great medicine of itself, it also acts as a vehicle to carry to the afflicted parts the other medicinal properties of the HEALER. It gives natural stimulation and nourishment to the hoof. There is nothing that can compare with it for this purpose, nor as a remedy for tender, brittle, hard and contracted hoofs, split hoofs, quarter cracks, mud fever, scratches, corns, cracked heels, grease heels, and for all kinds of sores and cuts anywhere on any stock. It will surprise you with its power as a healer and restorer. It is not a new remedy, but has been on the market in the East for many years, where it has given the greatest satisfaction.

4 oz. package, 25c; 12 oz., 50c; 32 oz., $1.00; 5 lb. pail, $2.00; 10 lb. pail, $3.50. It is easy of application. Send for Folder with many testimonials of big horsemen, vets and others. Or better accept our

TRIAL OFFER.

We will send you a 2 lb. can; use it 15 days, and if satisfactory send us $1.00. If not, write us to that effect, and you need pay nothing. We take all the risk; you just try it. Send for it today.

Tompkins & Co.
111, 113, 115 Winston St.,
Los Angeles, Cal.

CUTTER'S
Anthrax
and
Blackleg
VACCINES

Are given the preference by 80% of California Stockmen because they give better results than others do.

Write for prices, testimonials and our NEW booklet on Anthrax and Blackleg.

The Cutter Laboratory
Berkeley, California

Seldom See

a big knee like this, but your horse may have a bunch or bruise on his Ankle, Hock, Stifle, Knee or Throat.

ABSORBINE

will clean them off without laying the horse up. No blister, no hair gone. $2.00 per bottle, deliv'd. Book 8 D free. ABSORBINE, JR., for mankind, $1. Removes Painful Swellings, Enlarged Glands, Goitre, Wens, Bruises, Varicose Veins, Varicosities, Old Sores. Allays Pain. Book free.

W. F. YOUNG, P. D. F., 244 Temple St., Springfield, Mass.

For sale by Langley & Michaels, San Francisco, Calif.; Woodward, Clark & Co., Portland, Ore.; F. W. Braun Co., Brunswig Drug Co., Western Wholesale Drug Co., Los Angeles, Calif.; Kirk, Cleary & Co., Sacramento, Calif.; Pacific Drug Co., Seattle, Wash.; Spokane Drug Co., Spokane, Wash.

The Whiting Jersey Stock Farm Co.

Is making the very best strains of blood fresh from the island of Jersey a specialty. **Whiting Jersey Stock Farm Co. Heber, Cal.**

to the farmers' revenue. No farmer keeping ten or more cows can afford to hesitate about purchasing a silo.—Herbert A. Hopper, Purdue Experiment Station.

IMPERIAL PACKING HOUSE.

While at Imperial recently we had the pleasure of being shown through the yards and the packing house, which is becoming a factor in the welfare of the Imperial Valley. Mr. Geo. O. Love is the manager in charge. This is not an extensive proposition, but in a way means much to the prosperity of that community. It handles 40 to 50 cattle weekly, 30 to 35 hogs and 40 sheep. In the yards or pens are now some 1300 hogs fattening. As soon as government inspection can be secured a material extension of the business is anticipated. At present the capacity of the house is not large because of limited markets, but at this time a large scope of country east of Colton and west of Phoenix is being reached. This concern affords outlet for much of the stock which is being fattened on the rich pastures of the Valley, and in addition ships many live fat stock to larger markets. We believe it is an example of what might prove a most advantageous move in many other communities.

The greatest feeding value in skim milk is always found in feeding it to young animals.

Education and high milk yield go hand in hand.

Veterinary

Answers in this column by Fred G. Matthews, M. S., D. V. M., 1232 Central Ave., Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Worm Powder.

Please give a remedy for worms in horses. A powder which can be given in the feed is preferred.—R. C. F., Los Gatos.

A good tonic powder which is also a fairly reliable remedy for worms is made by mixing dried iron sulphate 3 ounces, pulverized nux vomica 3 ounces, pulverized gentian 5 ounces and bicarbonate of soda 5 ounces. Give a tablespoonful of the mixture three times a day in the feed.—F. G. M.

Udder Caked.

The udder of a mare was badly inflamed at foaling time. Treated with hot water and olive oil, and the swelling reduced, but at present, two weeks after foaling, it is still caked, though not painful when rubbed. Please prescribe.—Subscriber, Gardena.

Mix vaseline 8 ounces, zinc oxide 2 ounces, belladonna ointment 4 ounces and apply once daily with prolonged but gentle hand rubbing.—F. G. M.

Scratches.

A mare eight years old has scratches on the hind leg, above and under the pastern joint. There is some swelling, and there are four raw surfaces which scab over, but when washed these scabs come off. When the animal is worked she shows a little stiffness the first few steps, but no other evidence of pain.—Subscriber, Los Gatos.

Have your druggist prepare an ointment composed of amber petroleum one pound, zinc oxide 4 ounces and cerate lead subacetate 2 ounces. Apply this ointment freely once daily after gently removing scabs and accumulated dirt with a soft, dry cloth or cotton.—F. G. M.

Do your cows milk hard? Send 50 cents for teat expander. O. J. Weber Co., 225-227-229-231 East Sixth St., Los Angeles, Cal.

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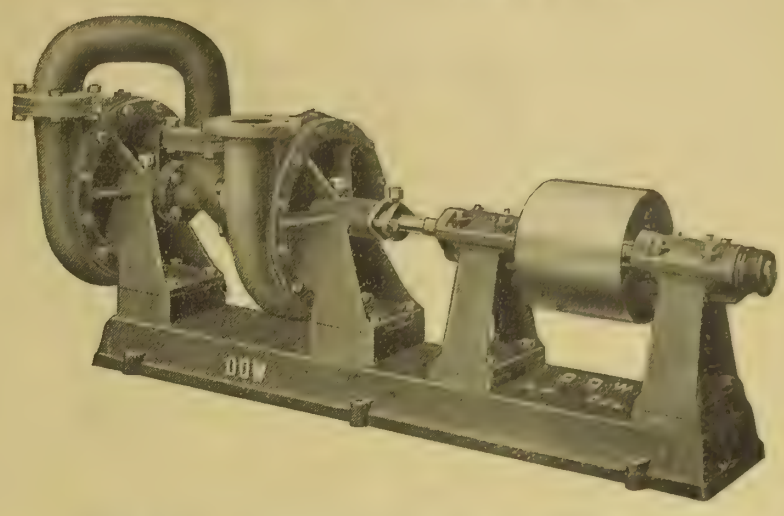

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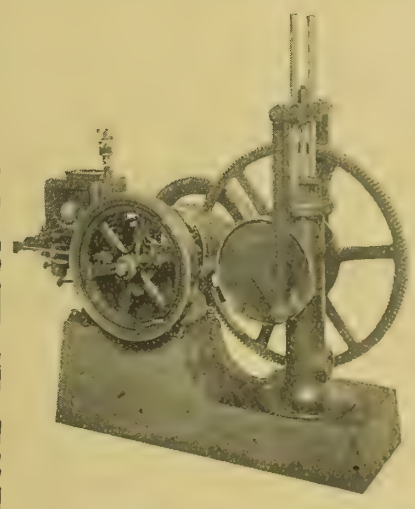

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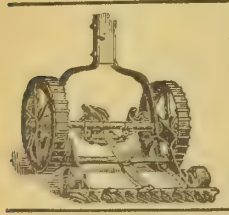

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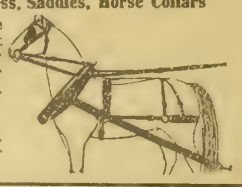

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The Ornamental Garden

THIS MONTH.

It is time to begin planning for winter flowers such as pansies and stalks, and these may be planted this month. Shasta daisies which are now a glory of white and gold must be given plenty of water and liberal cutting indulged in if the blossoming season is to be prolonged. Gladiolus and other summer bloomers require quantities of water at this season. In fact, all the garden must be kept thoroughly moistened as well as the lawn. Chrysanthemums should be kept thoroughly suckered or if the growth has been too rank, topping back may be advisable and large side branches should be removed extensively if large blossoms are desired. Some people, however, prefer the smaller blooms and greater quantity and it must be confessed the smaller flowers make a very handsome effect.

Rose bushes which have bloomed profusely during the past few weeks may now be hardened down by depriving them of irrigation until the branches of the size of a lead pencil begin to shrivel. Then heavy cutting off of this wood and all needless branches and thorough irrigation followed by fertilization will give a world of bloom a few weeks later.

It is now time to plant eucalyptus, acacias, and some other ornamentals. Blue gums, which grow so vigorously, should perhaps be held off until the last of the month or they will become too large before transplanting time comes in the spring. The best way is to plant these in the small "flats" such as the nurserymen use.

NEW ROSES FROM SEED.

By E. Benard, in the California Garden

In view of the announcement of a thousand dollar prize for a new rose for the Panama-California Exposition, it should be of interest to briefly consider how new roses arrive. Like babies, they are for the main part born of two parents, and the mixture of blood produces an offspring unlike either. The pollen from the male bloom fertilizes the female organ in the other, and nowadays this cross fertilizing is done by hand with the aid of a camel's-hair brush, and is not left, as formerly, to the uncertain ministrations of bees and other insects, when the saying that "it is a wise child that knows its own father" applied fitly to roses. Here in California roses ripen seed so readily that we ought to have a magnificent family with musical Spanish and Indian names. Rose seeds are uncertain in sprouting, some coming at once, others waiting a year, but best results are obtained with fresh seed. The seedlings want careful transplanting till they begin to grow, and are subject to mildew and rot, and the very vast majority revert to the wild single type, but new roses keep coming, and this is the way they come.

The question is often asked as to how to treat rose seeds. It is safest to plant in boxes, so as to be able to care for the little plants. Rose seedlings do not come up of themselves under our rose bushes, showing that in the open ground conditions are not favorable. Plant in boxes, keep moist and in an even temperature, and resolve to be patient. The seed, it would seem, should come from Kaiserin Augusta Victoria or one of the Cochets, preferably the former, as it is of better habit of growth. The Cochets are the crabs of the rose family, they move sideways, they must sprawl. Kaiserin crossed by Joseph Hill, Sunset, or even William Allen Richardson, should produce the yellow rose we lack so much.

SUCCESS IN GROWING PLANTS.

It is not so much special treatment, professional secrets or even knowledge that makes the successful grower, so much as love for the plants and interest in the work. Experts with all kinds of facilities and knowledge have failures, but the gardener who loves his plants, who can understand their language and can cater to their wants, does not fail with them without knowing why. To the thorough gardener the language of plants is as easily understood as the spoken word. To the trained eye their cry for water at the root or in the atmosphere, their protest against uncongenial temperature, is as plain as it can be. More food, too much food, sour, undrained soil ("cold feet," as the gardener calls it), more light, too much light, are calls the gardener must heed. In the vernacular, "get next" to the plants.

The successful greenhouse man does not need a thermometer to know the temperature of his greenhouses; the moment he steps inside of the door he "feels" whether the conditions are right or wrong. It is not only the temperature, but the moisture combined with fresh air that produces the atmospheric conditions. Even in the dark he knows if his American Beauties are happy, or as he steps into the carnation house if the plants are being too hard-worked, with no time to properly develop their bloom, or if the air is stagnant, encouraging disease among his pets. So it is in the dwelling house or out-of-doors. Learn the sign language of the plants and you will be one with them and know how to make them happy.

It is to this keen perception and knowledge of plants that we owe the great improvement of our cultivated varieties. New plants are not produced over night. Each one is a record of long patience, close observation and intense interest. The first indication the plant gives to its master of possible improvement would be unobserved by the many. Perhaps it is only a little deeper color or a slight variation in the form and texture of the flower or foliage that marks the first deviation from the regular type, but to the expert it is a loud cry of great possibilities.

A few hours in a garden with such men as the late Thomas Meehan opens up new worlds and shows what makes men masters in their professions. It is not so much profound learning as having eyes that see and a mind that can understand the language of the silent kingdom.—Ernest Hemming in Meehan's Monthly.

Men hurry to and fro in search of truth and are unconscious that it shines over them with the luster of a fixed star if they would keep silent for a little and let the air clarify itself and the heavens become visible once more.—Hamilton Wright Mabie.

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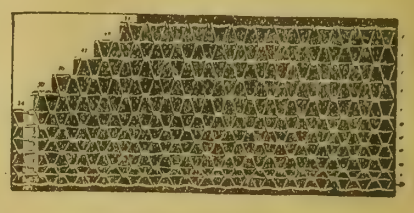

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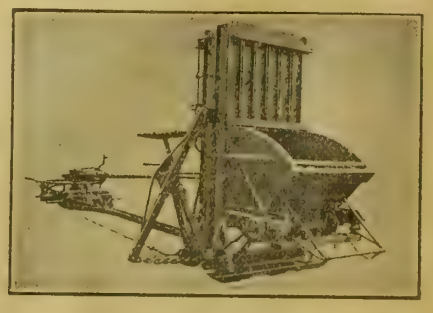

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Small Fruits and Vegetables

THIS MONTH.

Irrigation is an especially important factor in the garden work this month. Light sprinkling has ruined many crops because of spraying over the foliage in the heat of the day, and in addition not soaking the ground to the depth one often thinks. Furrow irrigation is the best where it can be followed and for this reason garden planted in rows will be easier to handle. When irrigating, let the soaking be thorough and the cultivation equally as thorough after the soil is in good condition.

It will be in order to plant casaba melons, squash, both green and lima beans, and later tomatoes. Of course, it is always in order to plant cabbage, cauliflower, radishes, lettuce, onions and beets. In planting at this time it is almost necessary to put over the seeds a light mulch of strawy manure as this prevents crusting of the soil which is sure death to the sprouting seed. In the absence of manure an old burlap sack laid over the ground is an aid. If the ground is not moist enough to bring the seeds through, sprinkling may be done through these sacks. If weeds or sticks are laid under the sack to allow the seeds to make a little growth before taking the sacks away there is less liability of burning the young leaves. It takes more skill to grow garden at this season of the year than in the spring, but results will amply compensate.

OKRA.

This is a crop exceedingly profitable when it can be put on the market early. It has no great food value, and will hardly become an important commercial product except where it can be utilized as a canned product in connection with other vegetables. It has been grown in the Southern states for many years, and is used especially for flavoring soups and preparations wherein meat forms an important part, and to these it adds a very pleasant taste. Some people may not enjoy the flavor of okra at first, but after eating a few times of dishes containing it, a taste for it is acquired.

The soil best adapted to okra is a rich mellow loam. It is a typical sun plant and requires warm weather to grow it. When it is once thoroughly established it makes a rapid growth and requires a great deal of plant food to sustain it. Quick acting commercial fertilizers will aid its development very materially.

The seed are slow to germinate unless the soil is warm and moist. The seeds are planted about like corn in rows from three to four feet apart. Where a stand is not secured from failure of the seed to germinate, vacant places may be filled by transplanting. Cultivate about like corn or cotton, using care to keep the soil well stirred, especially while the plants are small. After the plants get up from two to three feet high, little cultivation will be required except to keep the land free from weeds. It is a great drouth resister, and it will continue to bear until frost if the pods are not allowed to ripen on the stalk. As the pods are the only part of the plant used for food, the continued growth of the plant should be secured in order to produce the greatest quantity of marketable pods.

Harvesting.

As soon as the plants begin to set fruit the pods should be gathered daily, preferably in the evening. The flower opens during the night or early morning, and fades after a few hours. The pollen must be transferred during the early morning, and the pods thus formed will usually be ready to gather within thirty-six hours. The pods should always be gathered while they are still soft and before the seeds are half grown.

Besides the uses to which the okra pods may be put in the green or fresh stage, they are often dried and preserved to be used during the part of the year when a fresh supply cannot be obtained. There are several methods of doing this. By one of these the pods are cut into slices crosswise and about one-half inch thick; the slices are then spread upon muslin covered frames and dried, after which they are stored in thin bags until required for use. By another, and a more common method, the young pods are strung upon coarse threads and hung up to dry. In Turkey alone there are tons of the pods preserved in this way annually. This has grown to be quite a commercial crop in Turkey. It appears to me that it could be made an important one in this country. The trade would gladly aid in extending its use as a dried product.—Bulletin 232.

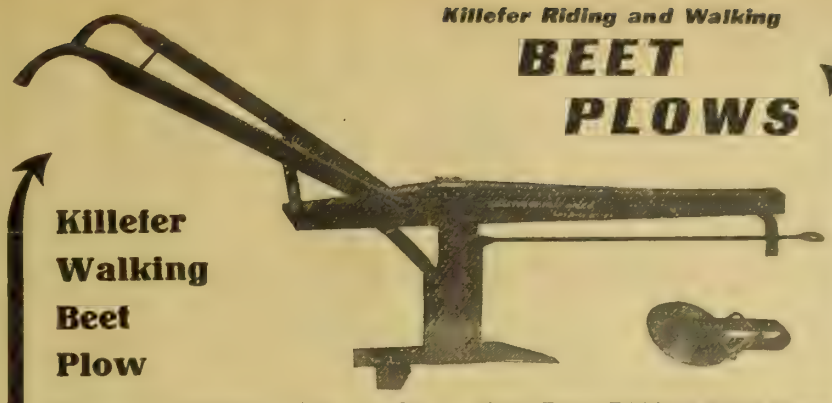
GROWING CUCUMBERS UNDER GLASS.

There is something attractive in producing cucumbers and other small products under glass so as to market out of season at long prices. The prices obtained during January and February are such that it looks as if great expense could be incurred in the production and still make a large amount of money, but we are told that one glass house in Los Angeles County, contracted for at a cost of $2,500, has been unable to make much profit because of the extremely limited time in which to market. California's climate is so favorable to all-the-year production that even cucumbers with cheap hot beds to aid will grow in the open most of the year, so that the glass house method will not pay cost of house construction. In the East, where there is a period of months when it is impossible to grow outdoors cucumbers and tomatoes and other such delicacies, the glass house proves more profitable.

The tomato is subject to attacks of various insect pests and diseases, among which are the tomato worm, which can be controlled by the use of sprays of Paris green and arsenate of lead or by hand picking; cutworms, which may be controlled to some extent by plowing the soil two weeks before transplanting and by the use of poisoned baits; the stalk borer, which may be controlled to some extent by the preventive measures of keeping the field free from weeds and foreign plants and practicing a rotation of crops; point rot, for which there is at present no effective means of control; ripe rot or anthracnose, the injury from which may be reduced by destroying diseased fruits and planting far enough apart to admit light and air into the plants; and leaf-spot diseases, the standard remedy for which is spraying with Bordeaux mixture.

Killefer Riding and Walking

BEET PLOWS



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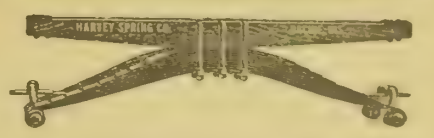

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Recent investigations as to Porto Rico's agricultural conditions, as reported by the Department of Agriculture, show that during 1910 the exports and imports of the islands increased to $68,595,074, while in 1901 the total amounted to only $17,502,103. Living conditions on the islands have also greatly improved.

PEDIGREE.

The word "pedigree" should not be debased or carelessly used as we fear it may be, especially when applied to "pedigreed plants," where an actual pedigree has not been established. A pedigreed plant, like a pedigreed animal, should be one that has been "recorded, known, of notable descent." This matter of pedigree was discussed at the last Pacific Coast Nurserymens Convention at San Jose.

We note a circular issued by a firm of nurserymen which appeals for "better stock, better labelling, better fruit," and in referring to the matter of better stock and fruit the word "pedigree" is freely used. This is most laudable and it is possible this particular concern has stock which is actually pedigreed and that the "buds and scions packed and labelled by this concern are sent out under a seal." If for "generations" the stock has been followed and its known performance records kept, the claims of the firm may be justified, but we do know that there has been carelessness in the use of the term. We may also mention the fact that when Mr. Shamel, the government expert, took up the matter of producing a finer strain of Washington Navels, he prepared his first blanks with the heading, "Orange Pedigree Record." Realizing the true meaning of the word "pedigree," he crossed it out and substituted "Orange Performance Record." In the course of years we doubt not Mr. Shamel will be able to place tags upon certain trees showing that they are entitled to head a line of pedigreed stock. We trust the term will not be brought into discredit through thoughtless use. When we say we are furnishing pedigreed stock, let us be able to trace back and give actual pedigree. If it is selected stock and the nurseryman has shown extra care, let the fact be stated, but not under the false claim of pedigree.

APPLE ANNUAL.

The management of the Watsonville Apple Annual is busy these days preparing for the next great show which will occur October 9-14. President Stoesser recently informed us that plans are in the making for a bigger and better show than last year, and that was so successful that it astonished the whole Pacific Coast. Sixteen exhibits were made at that time with a full carload in each exhibit. Hundreds and even thousands of other exhibits were made of lesser quantities of fruit. The pavilion built for the show was not only filled, but two immense tents outside were also used. The only disappointing feature was the heavy rain which prevailed during the first three days. Three judges were compelled to place ribbons on the immense amount of fruit last year, but for this year five have already been selected. All are from outside the boundaries of California. The presiding judge will be, as last year, Mr. C. E. Rowe of Grand Rapids, Michigan. The others are: J. L. Dumas, Walla Walla, Washington; C. J. Sinsel, Boise, Idaho; A. P. Bateham, Mosher, Oregon; F. H. Stanton, Hood River, Oregon.

THE FIRE EVIL.

The Western Forestry and Conservation Association with headquarters at Portland, has issued 350,000 leaflets on the forest fire evil. These are being distributed to school children in the four states of the Northwest.

Here are a few of the rules for preventing fires, which are equally as applicable in California:

"Don't toss away burning matches or tobacco.

"Don't make a campfire in leaves, rotten wood, or against logs, where it may spread or where you cannot be sure it is out.

"Never leave a fire until it is out.

"Don't burn a slashing in the dry season without a permit and without taking care to keep the fire from getting away.

"Put out any fire you find if you can. If you can't notify a fire warden, some other public officer, or the land owner."

BANANAS.

The United States imported last year over 40,000,000 bunches of bananas which some genius has figured out as aggregating 3,000,000,000 of the fruits. This necessitates each man, woman and child of us eating three dozen every year. Another genius, or perhaps the same one, has figured out that the "slip" of these peels would be sufficient to launch all the ships of the world. The wholesale value of this fruit at the point of export was over $12,500,000. Doubtless the consuming public feels it pays in excess of three times that. The importation has more than doubled in the last ten years and it is said the acreage being planted in the tropics is almost startling. The United States is by long odds the greatest consumer of this luscious fruit.

The wheat production in the United States in 1870 was 236 million bushels; in 1880, 498½ million; in 1889, 490½ million (dropping to 399 million in 1890, but advancing to 612 million in 1891, 522 million in 1900, and 665 million in 1910; though even higher records were made in 1901, 748 million bushels, and 1906, 735 million. The quantity of wheat retained for domestic consumption has greatly increased, while the quantity exported has been reduced. In the fiscal year 1910 the quantity retained for consumption was 650 million bushels, being larger than in any earlier year; and the quantity exported, 87 million, which was less than in any fiscal year since 1877, with the single exception of 1905, when only 44 million bushels were exported. In 1908 the exports aggregated 163 million bushels, and in 1902, the high record year in wheat exportations, 235 million.

The world's total silk output during 1910 was 24,350,000 kilos, a kilo being 2.2046 pounds. This was a slight decrease as compared with the year 1909. The total world's production in 1876 was only 8,354,000 kilos. Since that time the increase has been steady to the present immense quantity. The United States does not seem to be a material factor in the production. Approximately one-fifth of the world's output comes from western Europe, while the Orient produces far more than half. 5,345,000 kilos come from the port of Shanghai.

Growers of spuds have an opportunity to contest for a $1,000 silver cup to be offered by the great land show management at its exposition to be held next November. Productivity, edibility and appearance will be the principal requirements.

Humboldt County creameries paid for butterfat during the month of May the following prices: Libby, McNeil & Libby, 28c per pound; Central Creamery, 26¼c; Pioneer, 26c; Grizly Bluff Creamery, 25½c; Capitol Creamery, 25½c. The San Francisco butter price averaged 22½c for the month.

The man who predicts the downfall of the automobile is not a good prophet. The man who denies its great necessity and general adaptation to the needs of modern civilization is still less a prophet, while the man who predicts the annihilation of the horse because of the automobile, is foolish. While it is possible that there is a falling off in demand and prices of certain classes of light horses, like drivers and delivery horses on account of the increased use of the automobile and auto truck, there has been a steady increase in demand for the heavy draft type of horses, and this to such an extent that there are now indications of a reduction in the output of motors and cars during the coming season. This is the age of the draft horse, and in no place does he thrive better, develop to greater perfection and become more useful and valuable than in Kansas.—Kansas Farmer.

While at the Experiment Grounds at Spreckels Sugar Factory we saw a small plot of recently introduced barley which was spoken of by Prof. Shaw as one of the best for Californians. It is known as the Beldi. Prof. Shaw states that a planting of 320 acres of this barley has been made by Mr. A. M. Paul, manager of the Hendricks Estate near Riverside. This barley has been known to run in this state as high as 86 bushels (about 40 sacks) per acre. It is ten days earlier in ripening than the ordinary variety, and is thought to be particularly desirable for the hot interior valleys. Prof. Shaw suggests that in the Imperial Valley it will make a good crop to be followed by cotton.

One of the officers of the California Fruit Growers Exchange who can show a long term of service is Mr. Earl F. Van Luven of the Colton Exchange of which he was made manager at the formation of the organization back in the early nineties when the total shipments of his exchange amounted to only 61 cars. Shipments of that organization last year were in excess of 1500 cars. Mr. Van Luven now finds that his own interests compel his entire attention and he has resigned. He will be succeeded by Mr. B. B. Shepherd who has been Mr. Van Luven's assistant for five years.

The educational system of Young Mens Christian Associations throughout the country is attracting more and more attention every year. One of the new departures is the giving of attention to agricultural training. Poultry has come in for an especially attractive course in several different cities which are surrounded by agricultural communities.

The average value of farm lands in New Mexico has increased 160 per cent during the last decade, the number of farms 180 per cent, and improved land in farms 348 per cent. The total value of farm lands has increased 469 per cent.

The Percheron Society of America is having the most rapid expansion in membership in its history. The gain in new members between November 28, 1910 and June 20, 1911 was 784. This sum was an average gain of more than 112 monthly. Every state in the Union is now represented in the membership of the organization. "Facts About Percherons" will be mailed to those interested in the draft horse by Wayne Dinsmore, Secretary, Union Stock Yards, Chicago.

Agricultural News Notes of the Pacific Coast

Northern California

A Shetland pony farm is to be located near Williams, Colusa County.

The cannery at Marysville, Yuba County, will begin operations July 8.

The asparagus cannery at Walnut Grove, Sacramento County, has closed.

Glenn County has a pumping plant which is lifting 900 cubic feet of water per second.

Fresh fruit packing houses at Winters, Yolo County, are running to fullest capacity.

A large flow of artesian water has been struck near Germantown, in Glenn County.

Another dairy farm of over 300 acres is being established near Yuba City, Sutter County.

Vacaville fruit growers are being given a special daily fruit service by the Southern Pacific.

A sale of 82,000 pounds of hops was made by growers at Sonoma County at 25 cents a pound.

The new alfalfa meal mill at Chico, having a capacity of sixty tons a day, has just begun operations.

Santa Rosa grange has placed itself on record as favoring the establishment of free county libraries.

Several new instructors have been added to the faculty of the State Farm School at Davis, Yolo County.

The grain acreage of Woodland, Yolo County, although less than last year, promises a much heavier yield.

The directors of the Oakdale irrigation district are planning for the bringing of 70,000 acres of land under water.

Deputy Horticultural Commissioner Anderson of Yolo County is making an onslaught on Johnson grass along irrigation ditches.

The largest first shipment of pears ever sent from California left Vacaville last week. They were of the Wilder variety.

The Country Life Commission of California is planning to hold its next annual session at Davis during Farmers Week in October.

Contra Costa County apricot growers are contracting their cots at $55 per ton. Last year at this time the prices were ranging about $20.

The new alfalfa meal mill at Gerber, Tehama County, has started in on the second crop of alfalfa. It has an output of 80 tons a day and employs 30 men.

Fruit men of Oroville, Butte County, estimate a record breaking crop of Navel oranges. Reports from Wyandotte and Palermo are also most favorable.

Hop growers of Wheatland, Yuba County, expect the largest yield in their history. The local yards will employ about 2500 people to harvest the coming crop.

A sheep rancher living near Colusa has lost a number of valuable sheep killed by dogs. Many of the sheep were drowned in the Sacramento in trying to escape.

The premium list for the second annual Gravenstein Apple Fair at Sebastopol has been announced, and is far larger than last year. There are several large money prizes.

Central California

Apricot dryers are in the midst of a big cutting and drying campaign.

Three hundred acres of hemp were planted this year near Lodi, San Joaquin County.

The management of the Kings County Fair Association has decided to hold a fair this year.

Some citizens of Fresno are agitating a national irrigation exposition for Fresno in 1915.

A huge raisin stemmer has been installed at one of the raisin packing houses of Hanford, Kings County.

A 520-acre orange orchard is to be planted at Porterville, Tulare County. It will be the property of one man.

Thousands of acres are being planted to beans near Stockton on lands from which the water is being pumped.

New crop raisin contracts are being made on a $90 basis. Most growers, however, are holding for straight five cents a pound.

Some are estimating as high as 50,000 tons of raisins in the San Joaquin Valley, while others feel that this is altogether too high.

Some fruit growers near Porterville, Tulare County, maintain that certain characteristics of trees may be regulated by bud selection.

The Pajaro Valley poultry association has been conducting a hundred-new-members campaign. One week's work shows a gain of forty names.

An estimate of the prune crop of Kings County is that it will be not far from 30 per cent of normal. The growers are holding on a five-cent basis.

A. E. Miot, Secretary of the Tulare County Board of Trade, has delivered lectures in Los Angeles at which the total attendance aggregated almost 13,000.

A reclamation and levee district 35 miles long along the banks of the Tule River and reaching from the foothills nearly to Tulare Lake is under contemplation.

The district about Sanger and Selma, Fresno County, is one of the first in the state to put up a thorough anti-squirrel campaign. It is now showing decided results.

The Zante Citrus Association recently elected the following officers: V. D. Knupp, President; W. L. Hemphill, Vice-President; G. H. Langford, Secretary and Manager.

The great irrigation district contemplated for lands along the west side of the San Joaquin Valley and which at first was to include about a million acres now calls for a reduction of acreage to 370,000.

The first full car of fresh fruit shipped from Exeter, Tulare County, this season, consisted of Tragedy prunes, Burbank and Clyman plums. It sold in Chicago for $2254. The Tragedys commanded the highest prices, commanding $3.10 per box.

At a well attended meeting of Kings County stock and dairy men held at Hanford recently after an address by State Veterinarian Keane, it was declared the sense of the meeting that drastic measures looking toward the eradication of tuberculosis of dairy cattle should be taken.

Southern California

Orange County is agitating a campaign against the pestiferous coyote.

Orange County apricot growers are contracting dried fruit for 13½ and 14c.

Oxnard, Ventura County, expects to have a eucalyptus mill in operation by fall.

Hundreds of cattle are being brought into the Imperial Valley from Arizona ranges.

The apricot pit, once considered valueless, is now bringing the growers $30 a ton.

It is said that the Riverside district is not shipping as many oranges today as it did ten years ago.

A potato grower at Monrovia has realized a profit of $210 an acre for this season's production.

Sixty-five cars of oranges daily are being run through the pre-cooling plant at San Bernardino.

A tract of acreage at Winchester, Riverside County, will be subdivided and sold in ten and twenty-acre tracts.

A Redlands shipper will forward a car of ripe olive pickles for distribution in various New England sections.

A great irrigation project is planned for San Diego County. The principal factor will be a dam near Escondido.

The outlook for the walnut crop in Orange County is very promising. Harvesting does not begin until October.

The Anaheim Fruit Association recently secured for its members 15 tons of vetch seed for green manure crops.

A carload of sugar beets taken from Calexico to the factory at Glendale, Arizona, showed a test of 22 per cent sugar.

The county bee inspector of San Bernardino says that some bee men are being buncoed by so-called land agents.

The apricot season at Banning, San Bernardino County, opened later than usual, but the dry yards are running full handed now.

Huntington Beach is making complaint because of careless destruction of fine fruit trees by roaming stock and horses that are tied to them.

Prices of honey are running high owing to small crop. It is estimated that Southern California's output will be about half of the normal production.

Prof. Woodworth recently addressed the citrus growers of Covina on the subject of gas leakage in fumigation and methods of measuring content of tents.

Horticultural Commissioner Cundiff of Riverside County is experimenting with colonies of the beneficial parasite, scymins vagans, which it is hoped will control the red spider.

A cantaloupe train believed to be the longest the world has ever seen, left Imperial Valley for Chicago recently. It consisted of 130 cars and was a mile and a half in length.

The Chucawalla Development Company is pushing its plans for placing water on the Palo Verde mesa and some enthusiastic ones predict a valuation of $150 per acre on the mesa and in Chucawalla Valley.

The Coast

Stockmen at Boise, Idaho, are having excellent results with blue grass pasture.

At the recent horse sale at La Crosse, Washington, average price per head was $160.

Farmers of Springdale, Washington, say the hay crop this year will be the heaviest ever known.

Kittitas farmers will hold their first swapping bee June 21st to get rid of surplus stock and farm machinery.

Summer rains are falling at Tucson, Benson and Phoenix, Arizona. It is said to be rather earlier than usual.

The state veterinarian of Oregon is adopting drastic measures to stop the ravages of hog cholera near Portland.

The Lewiston section in Idaho estimates a yield of 10,000,000 bushels of wheat, an increase of 10 per cent over last year.

A creamery war is on at Kennewick, Washington. Rival companies are selling cows to farmers on the installment plan.

Arizona is already having fierce brush fires, one train being held up last week by a fire on the Yuma Indian Reservation.

The rebellion in Mexico is subsiding sufficiently so that farming and other operations are gradually returning to normal conditions.

Grain growers of Boise, Idaho, are petitioning the state game warden for an open season on quail because of great damage to grain.

The Winnipeg Free Press reports big attendance at the annual plowing match held by the Birds Hill and Springfield Farmers Institute.

Dr. Pinkerton, Northwest Chief of the Bureau of Animal Industry, has been called to Bannock County, Idaho, by a serious outbreak of sheep scab.

A plantation of tobacco is to be made at Kennewick, Washington. It is claimed the Columbia River Valley will produce some of the finest tobacco grown.

Report from Pullman, Washington, states that the cherry harvest of the Snake River is half over. Growers have been getting in the neighborhood of 85 cents a box.

Wool men of Baker, Oregon, have sold most of their clip at private sale this season. The last wool sale scheduled at Baker failed to materialize because of small quantity on hand.

Officials of the Tahoe National Forest have erected a watch tower on Banner Mountain which gives a view for many miles surrounding. It is for the purpose of quickly locating forest fires.

Caterpillars are overrunning everything so at Vancouver, Washington, that they are underfoot everywhere, and request has been made for the fire department to permit the use of fire engines for throwing poison solutions over all vegetation.

A fruit grower at Canyon City, Colorado, has found good results in exterminating the leaf roller pest through the use of smudge pots such as are used in frost protection. He places the pots in shallow pans of water, over the water being a light covering of paraffine oil, and he finds the leaf roller moths in the oil in the morning.

Dwarf Milo Maize and Red Kaffir Corn

The two great drought resisters should now be sown. There is no more profitable dry land crop than these two members of the sorghum family. We have taken particular care in selecting acclimated seed stock of the true dwarf varieties, yielding two to three tons per acre. Write for samples and cultural directions.

Pacific Egg Food

Makes hens lay; none better.
Good for molting time, too.

Special prices: 90 lb. sack, $1.75; 75 lb. sack, $1.50; ton, $37.50

Seed catalog "G;" Poultry supplies "H;" Which shall we send you?

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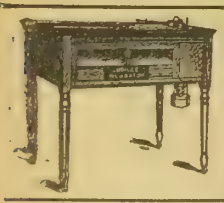

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To those who have difficulty in starting baby chicks for vigorous growth, we can furnish now or in the near future, vigorous chicks ***five*** weeks old as follows—

Blk. Minorcas 25c per strong chick
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Younger chicks for local delivery

Gardena Hatchery, Gardena, Cal.

Profit in the Poultry Yard

Practical poultry people who may have ideas from their experience as to methods of feeding and housing and general care of poultry will convey a favor upon the Cultivator and its circle of readers by sending in concise accounts. Mrs. Basley is always willing to answer queries which with the experience of others should make this a most valuable feature in poultry life on the Coast. Opinions or matters of a personal nature should be omitted, but a concise statement of facts is always valuable.

SUMMER WORK.

By Mrs. A. Basley.

"Seed time and harvest, summer and winter," have not ceased and each season brings its own work. We will consider part of the summer work in our poultry yards.

The good little hens, those that have worked so faithfully for us during the winter and spring deserve some extra care and even those who seem to have failed in their duty of laying eggs, they too should receive the extra care that will either make them more profitable to us in the future or render them fit subjects for the table.

Summer time should be a restful time and yet a growing time for the young. I always take the summer to rest from incubator work, and I like a change of work, so turning my attention to the fruits, vegetables and flowers, I let those hens that want to sit have the pleasure and comfort of hatching, I like to reward a good hen in this way, I really think it greatly helps them through the moult. It is a rest to a hen to retire from the society of her sister hens and to isolate herself with her precious eggs. Some hens, especially the Orpingtons, Cornish fowls, and White Rocks are particularly fond of their eggs, more so than the other breeds. They love to take care of them, turning them every minute of the day. Some are such attentive mothers that they sit too closely, being even unwilling to leave the eggs long enough to eat sufficient to keep up their own strength, nor long enough to air and cool the eggs, which is necessary to bring hardy chicks.

Turkey hens are very close sitters, They will sometimes starve to death, if not watched and removed daily. Muscovy ducks also are exceedingly faithful sitters and as their own eggs require thirty-six days to hatch, they really make good incubators for hen, or turkey eggs. They are used in France as incubators.

Summer work is not all "setting hens." It is although a light and easy work, a most necessary one. As in our ideal climate we have almost perfect summer weather the whole year round, summer work is almost a misnomer, perhaps I ought to call it "growing time" for the youngsters; "resting time" for the incubators; "war time" for the mites and lice, and "planning time" for poultry raisers. Now is the time to plan for eggs in the coming winter, for prizes at the shows, and for future prosperity.

Summer time is a good time for commencing in the poultry business. The weather is sure to be fine, and one can build and lay out yards and houses to better advantage than at other times. Part of our summer work should certainly be devoted to planning, but just today let us interest ourselves in the growing of the youngsters.

"Be sure to keep the pullets growing" was the order given in one of the poultry books that many years ago I was studying. The writer did not say how to keep them growing, nor what would prevent chicks growing, and I fairly hated that man for being so indefinite. Since then I decided that, poor fellow, he probably did not know himself. We will consider a few of the things that prevent growth at this season and the methods of encouraging growth and development of the young stock in the early summer.

There are three essentials for promoting growth. The proper food and water being the first requisites; secondary to these but almost as important, comes comfort, and last but not least, is exercise. I may say that the ideal way of promoting growth is to have the youngsters on a free grass range, with plenty of shade trees and plenty of sunshine. The range must have green succulent grass or clover and alfalfa with an abundance of bugs, grubs, worms, insects. This would be nature's own way of providing food, exercise, comfort. If in addition the chicks can be provided with a safe roosting place, sheltered on three sides from wind and overhead by the roof from dew or rain, protected from night prowlers by a chicken wire front, these would be ideal conditions for growth, for building up strong and vigorous bodies, for success and wealth to the owner.

Can you give your chickens such free range? Of what does your range consist? The needs of fowls do not vary, but the resources of places do. Does your free range at the present season include green grass or green alfalfa? Or is it a dry hillside with only cactus, horehound or sagebrush? Is it a dry stubble field or weeds? If any of these, you will have to supply deficiency by growing plenty of succulent green of some kind. The lack of bugs, worms, etc., we must supply, for these all vanish from the dried up summer condition of most free ranges, the worms go down so deep that no hen could scratch them up.

What would be a good substitute? The best I know is homemade cottage cheese and a pan of skim (or separated) milk, either sweet or clabber. Next to that either granulated or dried milk which can be bought at poultry houses; cooked or raw ground meat; or good beef scraps. The beef scraps must be good. It is quite difficult to keep beef scraps or beef meal in this climate, some that may be good when first purchased, if kept in a damp place or a warm place becomes lumpy, and these lumps frequently are found to contain a fungoid growth which is very poisonous. I have known of the deaths of thousands of chicks from this cause, so besides being careful to buy good beef scraps free from stones, dirt, hair, hoofs and horn, be careful where and how you keep it. Ground green bone or bone that is properly ground before grinding tend to promote growth and are good substitute for insects.

On the free range there should be kept a hopper or box of grain. I prefer the wheat and kafir corn mixed. These do not spoil or ferment as quickly as grains that are broken or crushed.

Culling is part of the summer work which might almost come under the head of economy. The cockerels should be culled, that is separated from the pullets. This should be done

as early as it is possible to detect the difference in the sexes by the comb and wattles. My reasons for this are that the more room and the more freedom the pullets have the better they will develop, while if the growing young cockerels are kept together by themselves they will not scrap or fight and can be fed more easily for the market.

The sexes are about even in a hatch. The pullets we want for egg production and the cockerels to be fattened for market, only keeping out the few necessary for breeding purposes.

Summer work with the little chicks means keeping them clean from lice and mites and fleas, not allowing them to run with the older fowls and keeping their houses and runs clean, growing them plenty of green food. I do not think it is possible to overfeed them with alfalfa, lettuce, clover or cabbage. Of course green clover or alfalfa cannot be left in a heap as one man did. In a short time his fowls were sick, when he gave them food they would not eat, looked at it, backed away, tumbled over, acted either silly or sleepy, walked when roused like they were drunk. He thought the fowls must be inbred or have weak constitutions. Just careless summer work about ruined that flock and that man gave up the poultry business, declaring it a fraud.

Green clover, alfalfa or any vegetable will not give (but will prevent) diarrhoea. Diarrhoea is caused by meat, animal food, anything putrid or mouldy, mouldy bread and even mouldy vegetables. Never throw vegetables, parings or leaves on the ground in the chicken yard, you will soon have a vile-smelling, unhealthy place and diseases of all kinds. Dig a hole and bury all that you cannot chop up. Chop up raw vegetables, because chickens have no teeth and cannot bite off the food. If it is growing or fastened, they may peck or pull off a mouthful at a time, but when thrown out they cannot bite it off, but will drag it around and get it so dirty that it would be poisonous for them to eat it.

Cleanliness, green food, clean water, shade, that is a synopsis of summer work. That will keep the little chicks free from all ailments and will keep the pullets growing.

If you do not wish to sell off the cockerels and have range to keep them, about three weeks before you want to market them, put them up to fatten them, or I might say to fleshen up for market, for we want to put juicy flesh upon them, and not layers of fat. In order to make them tender and juicy we must restrict their liberty, by keeping them in a very small yard, or in a fattening coop. This will prevent their forming muscle and make the flesh tender, while the proper food will tend to make them juicy.

The crate used for fattening fowls can be four or six feet long. Mine were composed of lath six feet long; the frame of the crate is 6 feet long, 18 inches wide and 18 inches high, divided into six little stalls or compartments. The frame is covered with lath, placed lengthwise on the bottom, back and top the width of one lath apart. The first lath on the bottom should be two inches from the back to allow the droppings to fall through, otherwise they would lodge on the lath at the back. The lath are placed up and down in the front, the spaces between them being two inches wide to enable the chickens to feed from the trough. A V-shaped trough is made to fit into two notches in cleats in front of each crate. The crate stands 15 inches from the ground; the droppings are received on sand or other absorbent material and removed daily. The coop is large enough to hold 12 or 18 young chicks (2 or 3 in a stall) or six full grown fowls. Fowls are fed three times a day all they will eat in 15 minutes.

A good formula for fattening is equal parts of bran, corn meal and oat meal mixed with skimmed milk, fed three times a day. The last week of the fattening process, five per cent of cotton seed meal may be added. A little salt and coarse sand or grit should be added to the food. Chickens do not seem to be able to stand the confinement and crate feeding for more than three weeks. The food should be removed in fifteen or twenty minutes and fresh water left before them. This feeding will make them juicy, tender and delicious. Old fowls will be made wonderfully tender by a three weeks course of this feeding.

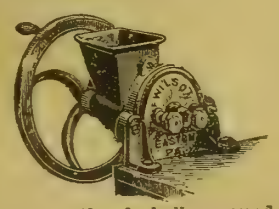
When the mother hens wean their chickens, see that all the lonesome little fellows do not crowd into one coop. Where crowding occurs, some of the weaker chicks are often smothered to death.

POULTRY SUPPLIES

In Ordering any of these Supplies Please Consult Page 743 of the Cultivator, Published June 22, and You will see attractive prices on Groceries, which You want to Include in Your order.

	Per sack
Lightning Chick Grower, 5-lb. sack	$0.50
Stayco Chick Feed, 100-lb. sack	2.60
Egg Food, 90-lb. sack	2.10
Scratch Feed, 100-lb. sack	2.00
Alfalfa Meal, 100 lbs.	1.25
B. B. Meal (blood-bone)	2.40
Beef Scraps (best made), 100 lbs.	3.10
Bone, Ground, Local, 100 lbs.	2.10
Bone Meal, Local, 100 lbs.	2.20
Charcoal, 50 lbs.	1.10
Charcoal Powder, 50 lbs.	1.10
Chili, Ground, 100 lbs.	6.50
Hydrated Lime, 100 lbs.	1.25
Hydrated Lime, smaller quantities, per lb.	.01½
Milk, Dried (or evaporated), 100 lbs.	3.75
Oil Cake Meal, Eastern, 100 lbs.	2.80
Oil Meal, Caproce, 100 lbs.	1.45
Rice, Chicken, 100 lbs.	2.50
Rice, Bran, 100 lbs.	1.75
Shell, Oyster, 100 lbs.	1.30
Shell, Clam, 100 lbs.	.80
Sunflower Seed, 100 lbs.	5.40
Spratts Dog Biscuit, doz.	2.65
Spratts Cat Food, doz.	2.65
	Per cwt.
Cracked Wheat	$2.00
Chicken Wheat	1.75
Corn	1.70
Cracked Corn	1.75
Rolled Barley	1.50
Bran, Heavy	1.75
Kaffir Corn	1.95
Feed Meal	1.80
Middlings	1.95
Oats, White	1.90
Oats, Red	1.80

GRINDING MILL.



For hand use; will grind dry bones, shells, all kinds of grain, rock, crockery, stale bread, crackers, spices, etc. A customer writes us that he sold $105 worth of shells ground on a No. 1 Mill, and the mill is as good as new. We also furnish sleeve attachment to this mill for separating the dust when crushing shells, and flour when cracking grain; price 60c extra. Diameter of hand wheel is 20 inches.

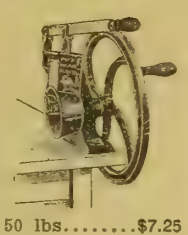
Without stand, weight 36 lbs. $5.25
With stand, weight 64 lbs. 6.50

BONE AND SHELL MILL

No. 750 for use on bench or box. Intended for grinding dry bones, shells, corn, roots, bark, feed, etc. Strong and cuts rapidly. Capacity 70 lbs. per hour.

Wght 60 lbs. .. $9.00

GREEN BONE CUTTER



Best for the money. Cuts easily, fine and fast. Has steel knives which can be taken out and sharpened and reset in a few minutes. Diameter of hand wheel 22 inches.

Without stand, weight 50 lbs. $7.25
With stand, weight 80 lbs. 9.00

ALFALFA CUTTER

This machine will cut hay, grass, clover, cabbage leaves, or any kind of green feed for fowls. Size 16 inches long by 11 inches wide. It will cut enough feed in one minute for three dozen fowls, and by means of the adjustable gauge can be regulated to cut from ¼ inch to any desired length.

Weight 7 lbs. $3.25

LITTLE ASPINWALL SPRAYER

These sprayers are needed by every poultryman and farmer; just the thing for spraying Lice Killer. They are used extensively on horses, cattle, swine, and for spraying clothes, carpets, cigar wrappers, etc., in fact, wherever a sprayer is needed.

Each 50c

LIGHTNING INSECT SPRAYER.

Made of tin. Suitable for spraying any of the thin liquid lice exterminators commonly used in poultry houses.

Each 50c

The Complete Sprayer. Is adapted to spray any of the liquids commonly used for poultry houses, orchards and gardens. For whitewashing this pump has no superior, and we highly recommend the "Complete" for whitewashing fences, and poultry houses and large buildings. The tank is galvanized iron, holds five gallons of liquid, which is forced through the nozzle with compressed air, pumped into the tank by the use of a brass force-pump.

Weight, 10 pounds $4.65

LIGHTNING WHITEWASH SPRAYER NO. 28

The best low priced bucket spray pump made, of heavy galvanized iron, and especially suitable for spraying whitewash in poultry houses and on fences.

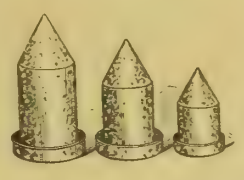
Price, each $1.75

POWDER GUNS

About as large as can be comfortably held in the hand.

Price, each 23c

DRINKING FOUNTAINS



These fountains are made of heavy galvanized iron and will not rust or break, and with reasonable care will last a lifetime. Can be taken apart and easily cleaned. Fowls cannot get on top or into them, nor turn them over. These fountains give the best satisfaction.

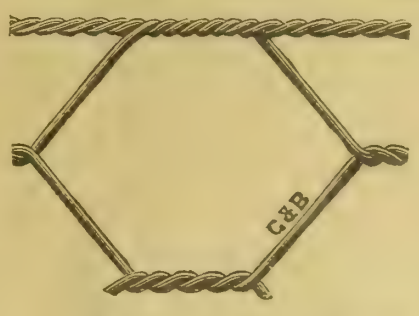
No. 1—One quart 23c
No. 2—Two quarts 36c
No. 3—Six quarts 53c

POULTRY NETTING

Sold in rolls of 150 lineal feet only.

Carried in stock all widths, 12 to 72 inches. In ordering specify width, size of mesh, and guage of wire. We quote only No. 20 guage wire, which is the common standard used.

2-Inch Mesh—	Per roll
12 inches wide, 150 feet long	$ .65
24 inches wide, 150 feet long	1.30
36 inches wide, 150 feet long	1.95
48 inches wide, 150 feet long	2.60
60 inches wide, 150 feet long	3.25
72 inches wide, 150 feet long	3.75
1½-Inch Mesh—	
12 inches wide, 150 feet long	.90
24 inches wide, 150 feet long	1.81
36 inches wide, 150 feet long	2.70
48 inches wide, 150 feet long	3.61
60 inches wide, 150 feet long	4.51
72 inches wide, 150 feet long	5.42



1-Inch Mesh—	
12 inches wide, 150 feet long	1.69
24 inches wide, 150 feet long	3.33
36 inches wide, 150 feet long	4.97
48 inches wide, 150 feet long	6.61
60 inches wide, 150 feet long	8.27
72 inches wide, 150 feet long	9.90

Above wire is galvanized before weaving.

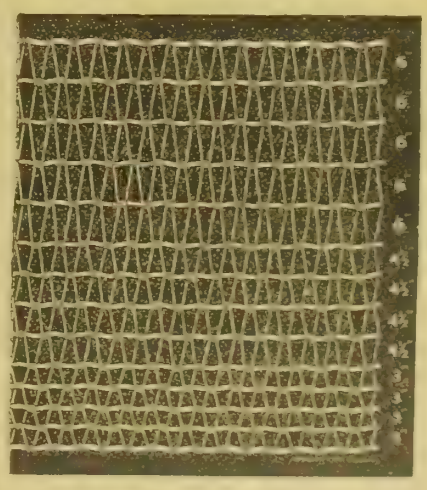
POULTRY AND RABBIT FENCE

Style No. 28

Showing special graduated diamond mesh Poultry and Rabbit Fence. Height 25½ to 60 inches. Rolls 10 and 20 rods each. Top and bottom wires No. 11 guage, intermediate line wires No. 14, mesh wires No. 16—2½ inch mesh. All wires of self-regulating coiled spring.

This fence will stop poultry on one side, and hogs, sheep and cattle on the other, owing to the fact that it is constructed of all large wires, woven closely together. It is not necessary to use top or bottom rail with this fence.

This fencing is shipped direct to you from the factory at Stockton, Cal.



		Weight per rod.	Price per rod.
Height	60 inches	13.2 lbs.	$0.72
Height	54 inches	12.6 lbs.	.69
Height	48 inches	11.0 lbs.	.66
Height	36 inches	8.7 lbs.	.51
Height	30 inches	7.7 lbs.	.45
Height	25½ inches	6.6 lbs.	.40

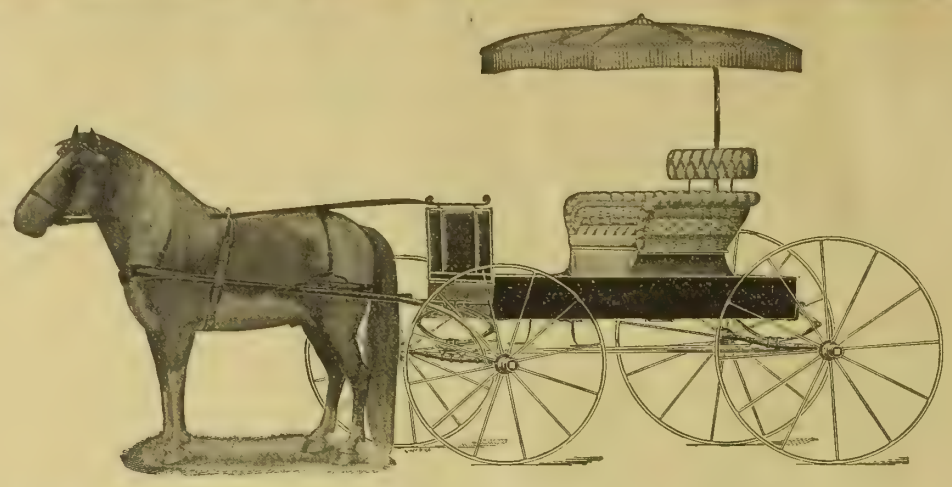
All of the Poultry and Stock Foods we quote are balanced rations of the best grade, properly blended and compounded to get the results looked for in the shortest time possible. Remember they are sold with our absolute guarantee of satisfaction or money refunded.

We Sell Everything—to Everybody | **Largest Shippers of Merchandise in the West**

McSTAY SUPPLY COMPANY Inc.

Wholesalers and Manufacturers of General Merchandise

439 to 449 East Third St. **Send for Catalogue** **Los Angeles, California**



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We have just unloaded and placed on display some of the most attractive styles of one and two-seated venicles for small horses and ponies ever shown in Los Angeles.

Call and See Them or Write for Catalogue

Arnott & Co. 112-118 So. Los Angeles St. Los Angeles

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—EVERYTHING—

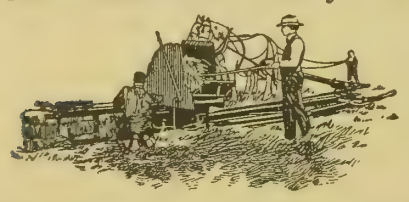
JUBILEE INCUBATORS — **PEERLESS CHICK FEED** — RELIANCE BROODERS

RAISES EVERY CHICK EVERY TIME

845 SO. SPRING ST. LOS ANGELES. — POULTRY BREEDERS SUPPLY HOUSE — SEND FOR FREE CATALOGUE

FRANK J. IRONMONGER

Three Stroke Self Feed Hay Press



Two men can run it. All steel and iron. Smooth bales. Easy draft. Satisfaction guaranteed. Free trial. Ask for catalogue 28.

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JOHN SCHILLING Jr.

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Send for Circulars.

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the most efficient all round Heating appliances for Stoves, Ranges, Boilers, Water-Heaters, and especially Hot Air Furnaces of all kinds. Brooder House and Heating Stoves. Send for Free Circulars.

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Importer and breeder of RED POLLED CATTLE, SHROPSHIRE SHEEP, RAMBOUILLET SHEEP, HORNLESS AMERICAN MERINO SHEEP. Both sexes for sale. Take electric car at Petaluma or Santa Rosa for LIVE OAKS STATION. Address all mail to Petaluma, Sonoma Co., Cal.

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As steady, quiet, and even as a clock, after years of hard service, and that in every kind of place and under every condition. That affords a driller a lot of satisfaction and saves a wonderful lot of expense, time, and worry That's why

Star Portable Drilling Machines

are so universally preferred. No worry, no useless noise, no racking the machine, no vexing delays, but working all the time.

More Hole---Greater Depth---Less Cost

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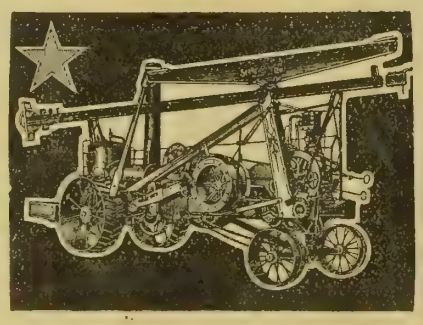

DIVIDEND NOTICE.

The German Savings and Loan Society

(The German Bank)

(Member of the Associated Savings Banks of San Francisco.)

526 California St., San Francisco.

For the half year ending June 30, 1911, a dividend has been declared at the rate of four (4) per cent per annum on all deposits, free of taxes, payable on and after Saturday, July 1, 1911. Dividends not called for are added to the deposit account and earn dividends from July 1, 1911.

GEORGE TOURNY, Manager.

Ask for "The Blue Pail."

MOST POPULAR GREASE IN THE WEST

For Carriages, Wagons, Harvesters and Machinery of all kinds.

IN CONSTANT USE FOR 16 YEARS

A Better Grease for less money Wears longer and you use less

Reduces Friction to a Minimum

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The Brininstool Co.

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All Dealers Sell HUB Axle Grease

Farmers! Be Successful. —Grow peanuts for market. Make big money. No loss. Always a market for them. Send at once and I will send you a receipt for keeping Potatoes from one season to the other all for $1.00.

V. W. Greer, 5309-14th Ave., Ballard, Wash.

Cream Separators, all sizes and prices. Guy F. Kelsey & Co., 106 East Eighth St., Los Angeles, Cal.

CANTALOUPES AT BRAWLEY.

Continued from Page 3.

labeled and stacked ready for the seasons' shipments. The packing is done in the fields and the melons delivered at the shed ready for loading on the cars, which are run directly into the shed to keep from the direct rays of the sun. The loading is accomplished by arranging the crates in tiers and "stripping," much the same as oranges, apples and other fruits are stripped or nailed in the car. The cars vary somewhat in the number of crates but it is scarcely ever below 306 and sometimes as high as 380.

It may be interesting to know what is meant by a crate. There are three different sizes. The pony is 11x11x23½ and contains 54 of the smallest size cantaloupes. The next size is the standard and preferred size, which is 12x12x23½. This contains 45 desirable fruits of about four inches in diameter. The jumbo or largest crate is 13x13x23½, and though larger contains a less number of fruits, viz., 36, still larger than the standards. The cost of these crates is about 13c each, or including the making about 16c. This one house will send out in the middle of this season about 18 cars daily.

Cantaloupes have proven remarkably profitable some seasons. The first two in particular the profits were very great. This caused a rush of planters and the season following was nothing more or less than a calamity. Dozens of men who had rushed there with a small amount of capital and no experience, expecting to carry the fruit through at a great profit, left without a penny, and many laborers who had been enticed to the Valley by offer of good wages through the season, were unable to collect for their work enough to pay for their railroad fare. Last year, however, the business returned to a sane or normal condition, and this year there is every promise of profit to those who are engaged in it. It is a business which requires intelligent farming. This year there are perhaps 700 acres planted in the Valley which will not be marketed, this for the reason that the planters did not give intelligent early care and the fields are so spotted as to be a practical failure. The man who goes into this business without fully understanding the requirements is indeed foolish.

We may note one departure which may lead to greater profit. It is the combination of melons and cotton. One of the Japanese growers tried it last year, and several are making the experiment this. The melons will be out of the way by the middle of July when the cotton will require greater attention and moisture. Then the vines may be removed and the entire season given to the growth of the cotton. It looks well in theory. The output last year was about 1800 cars. It is thought that it will exceed 2000 this year.

One difficulty with the industry has been the marketing. Co-operation seems to have been almost a failure. The one association of which Mr. Hovley is president, has held together and done well, but the majority of the growers have not yet seen the value of getting together upon a purely co-operative marketing basis. Some of the growers are whites and some Japanese, all of various grades of intelligence; many are suspicious and will not trust their business in the hands of anyone else, and so long as this spirit obtains co-operation cannot be brought about.

Questions and Answers

THE EDITOR AND STAFF

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

The Moult.

Should hens moult in June? If not, what would cause them to do so? I have some fine Barred Rocks that are moulting now.—Mrs. H. C. W., Goshen.

We consider that the moult should come on in August. However, it is not possible to fix any sure date, for young hens (especially in their first moult) moult earlier than the older hens. Also when a hen has been sitting she almost always moults if it is near the moulting season, and I think that the quiet, warm days with a smaller amount of food which a setting hen eats helps to loosen the feathers, so that a hen that is mothering chicks comes through the moult earlier, quicker and better than one that is not so occupied. Give your moulting hens plenty of green food at this time of the year.—A. B.

Leghorns.

What are the Standard requirements of Single Comb White Leghorns, especially the color of the legs? —A. R., Tulare.

For a full description of the S. C. W. Leghorns see the new Standard of Perfection. The shanks and toes should be rich yellow. However, red showing on the outside back of the scales in cockerels is not a defect, but shows vigor. The disqualifications are red covering more than one-half of the surface of the earlobes in cockerels and pullets; feathers other than white in any part of plumage; shanks other than yellow. I would add that if the land in the poultry yard is the dark adobe, or alkali, you will have difficulty in keeping the legs a good yellow. The real yellow comes when they are on green grass.—A. B.

Marking Fowls.

What is the best way to mark fowls so one can tell their age at any time? Do you consider punching the feet satisfactory? If so, at what age should the feet of young chicks be punched? —Subscriber, Tulare.

The best way of marking fowls is by toe punching. This should be done as soon as they are put in the brooder, or about the first day after they are hatched; the sooner the better, as the toes do not then bleed and it does not seem to hurt the chick. You can punch or mark one foot this year and the other foot next year. There are sixteen ways given for marking with every toe punch.—A. B.

Drakes or Ducks..

Kindly state in your next issue how to tell the drakes of a flock of Fawn Indian Runners at nine weeks old, as I wish to keep the ducks for laying.—A. D. D., Artesia.

When the ducklings are only a day or two old the little males are usually larger than the females. At nine weeks of age there is not much difference in their size, but the male has a squeaky, light voice, more of a whistle than a quack, as if he had a sore throat, whilest the female not only does most of the talking, but her voice is deeper and the quack very distinct and loud. At twelve or fourteen weeks the drakes get curled feathers in the tail.—A. B.

Eyes Shut.

What causes the eyes of young chicks to stick shut? They do not usually commence until the fourth day, and last two or three days. They do not seem to be sick, as they go right to eating when the eyes are opened. Do not have this trouble with hen hatched chicks.—Subscriber, Tulare.

It is usually a sign of roupy parents when the chicks' eyes stick shut, but as you say it is only your brooder chicks that are affected in this way, it may be caused by dust in the brooder or lime dust in their run or a slight cold from being overheated, or possibly from mites. Discover the cause and remove it. Bathe the eyes with a weak solution of boracic acid, half a teaspoonful in half a cup of water that has been boiled. Sometimes it may be necessary to gently grease the outside of the lids with a little lard, but usually bathing the eyes with the boracic solution is all that is necessary.—A. B.

Aphis.

I enclose stalk of bachelor's button which is infested, I suppose, with green aphis. All of these plants are affected, but few others in the garden are.—Subscriber, Watsonville.

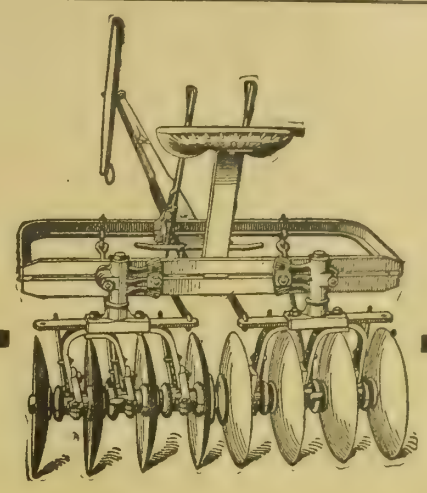
This was aphis, and a good healthy specimen as well. Almost any weak spray will answer, strong soapsuds, tobacco solution, or distillate emulsion. Unfortunately the pest is persistent and may return in a few days in full force.

To Pick Ducks.

In response to recent query in Cultivator I submit following: As soon as ducks are killed dry pick them, removing all large feathers. Dust powdered rosin into remaining down, dip the birds into scalding water, let cool an instant, dip again, then wrap in cloth and let them steam a few minutes. This melts the rosin which hardens when again exposed to the air, matting the down together so it may be removed in large flakes. Next singe the birds, afterward scrubbing in warm water with soap to remove grease and smoke. Rinse thoroughly in cold water. This is an easy and efficient method and one used by professional pickers.—Mrs. C., Tulare Co.

Blight of Tomatoes.

Tomato vines are affected with some



Cotton King Disk Harrow

This harrow is symmetrical in design and strong enough to withstand the heavy work which a disk harrow encounters in a field. It is equipped with three steel standards, which insures great strength and will not clog when working over freshly-plowed ground or among clods. It will work equally well in any condition of soil, no matter whether the field is sandy or soggy. The gangs respond promptly to the levers so that the driver can easily adjust the disks to work at any desired angle. The frame is high and the disks can be so extended that there will be ample room for passing the plants when using the harrow as a cultivator. The levers do not extend below the tongue where they would interfere with the plants being cultivated. This disk harrow is just what you need. Come and investigate.

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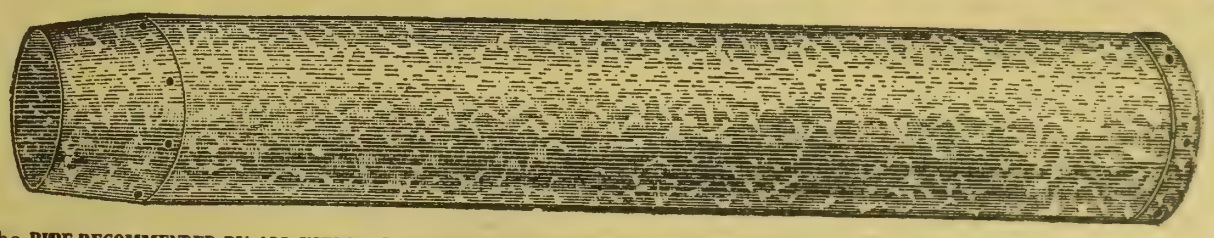

The **PIPE RECOMMENDED BY ALL USERS.** It is the **ONLY SCIENTIFICALLY CONSTRUCTED SURFACE IRRIGATION PIPE** on the market. **THERE'S NO ROUND SEAMS TO LEAK,** retard the flow of water or weaken the pipe. This pipe is easily handled and cheaper than flumes. It will last a life-time. For irrigating alfalfa it is the only pipe to use. We make **RIVETED PIPE AND TANKS.** Write for Illustrated Catalogue, also **SPECIAL IRRIGATION FOLDER** which may mean much to you.
American Steel Pipe & Tank Co., General Offices 342-43 Pacific Electric Bldg., **Los Angeles, Calif.**

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Merchant Pipe for Steam, Gas, Water

10,000 feet	¼-inch	Standard, at	1c per foot
10,000 feet	⅜-inch	Standard, at	1c per foot
25,000 feet	½-inch	Standard, at	2c per foot
20,000 feet	¾-inch	Standard, at	3c per foot
36,000 feet	1-inch	Standard, at	4c per foot
20,000 feet	1¼-inch	Standard, at	5c per foot
30,000 feet	1½-inch	Standard, at	6c per foot
50,000 feet	2-inch	Standard, at	8½c per foot
10,000 feet	2½-inch	Standard, at	14c per foot
15,600 feet	3-inch	Standard, at	17c per foot
15,000 feet	3½-inch	Standard, at	19c per foot
20,000 feet	4-inch	Standard, at	24c per foot
30,000 feet	5-inch	Standard, at	40c per foot
20,000 feet	6-inch	Standard, at	45c per foot

Oil Well Casings

1,000 feet	10-inch	Diamond B. X. 40-lb. Special Casing, good as new	$1.00 per foot
1,000 feet	11⅝-inch	Casing, at	$1.00 per foot
1,000 feet	9⅝-inch	Casing, at	75c per foot
2,000 feet	7⅝-inch	Casing, at	45c per foot
0,000 feet	5⅝-inch	Casing, at	32c per foot
30,000 feet	4-inch	Casing, at	19c per foot
30,000 feet	3½-inch	Casing, at	16c per foot
20,000 feet	3¼-inch	Casing, at	15c per foot
25,000 feet	3-inch	Casing, at	14c per foot
50,000 feet	2-inch	Casing, at	6½c per foot

WATER PIPE—Riveted Dipped Pipe

10,000 feet 24-inch Riveted Pipe, dipped, good as new	30c
10,000 feet 12-inch Riveted Pipe, dipped, good as new, 10-guage	35c
20,000 feet 10-inch Riveted Pipe, dipped, good as new, 12-guage	35c
10,000 feet 8-inch Riveted Pipe, dipped, good as new, 16-guage	25c
10,000 feet 6-inch Riveted Pipe, dipped, good as new, 16-guage	20c
10,000 feet 4-inch Riveted Pipe, dipped, good as new, 16-guage	10c
20,000 feet of 14, 12, 10, 8, 6, 4-inch damaged Riveted Pipe, used for drain and culvert pipes for under streets, at reduced prices.	

Telephone and Telegraph Poles

20,000 feet 3, 3½, 4-inch Pipe, cut to 16, 18 or 20-foot joints, for telephone poles, fitted up with cross-arms for that purpose.

We are offering special prices to save handling this pipe. We will fill your order on any amount or size of pipe. Small orders will secure the same attention as large ones. We carry a full line of pipe fittings at reduced prices. Mail orders promptly filled. Check or money orders received. Call and examine this pipe at our plant.

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This practice in connection with our well-known motto:
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has given us the largest volume of business in this line in the southwest,

Give Us a Personal Call and if you can't call at the house write us a list of your wants

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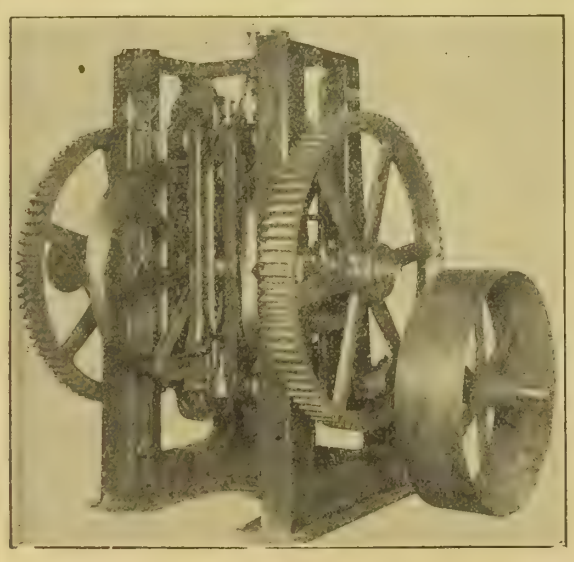
The Luitwieler Improved Pump



(Non-Pulsating)

Both large and small capacities. Sizes from 2 to 75 horse-power in stock, to lift from 3 to 100 miner's inches of water.

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Luitweiler Pumps save you from 20% to 60% of your fuel or power bill. Power costs real money. SAVE POWER. Save Money. Get our absolute written guarantee before buying a pumping plant. Heads equipped with sliding bases. No pit. No breakdowns. No bother. No tearing down to put on new leathers. Minimum of attention only. Always have water. The only plunger pump practical for use geared direct to driving power.

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LOS ANGELES

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The Most Profitable Dairy Breed
Illustrated Descriptive Booklets Free
Holstein-Friesian Ass'n of America
F. L. Houghton, Secy. Box 120, Brattleboro, Vt.

JOHN LYNCH
Breeder of Registered **Shorthorns**
MILK STRAIN
Petaluma Cal

Thoroughbred Poland China Swine
Barred Rock Poultry
High Grade Stock of Best Strains.
Young Stock for Sale.
M. Bassett *Hanford, Cal*

sort of blight. They have green fruit and have had plenty of water, yet they wilt and curl up even when vines are strong and vigorous. They ultimately turn yellow and die.—L. K. B., Porterville.

This is plainly a case of fusarium or tomato blight. If it is the socalled "summer blight," there is no practical help known. The fall blight, which affects leaves, may be controlled by spraying with a weak Bordeaux, say 5-5-50, but this latter trouble usually comes with the first warm rains of the fall. Summer blight affects the roots, and the only hope is clean and healthy plants set in soil which has never shown the trouble.

Legal

Edw. L. Payne, attorney, 301-304 Douglas Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Payne is paid. When replies are wished in Cultivator address query to 115½ N. Broadway. Los Angeles.

Inheritance of Homestead Right.

A wife has homestead and dies without will, leaving husband and children. The husband sells the property. Do not the children have rights in it and can they secure them now?—Subscriber, Lompoc.

If the property was the separate property of the wife, and she did not join in the selection of the homestead, it would descend to her heirs, and the children would nave an interest in it the same as though it had not been homesteaded. If she joined in the selection of the homestead, it vested absolutely in the husband on her death, and the children would have no right therein, except as heirs of their father, and he could dispose of it to suit himself, during his lifetime.—E. L. P.

Taxing Desert Claims.

A man has a filing on 160 acres of desert land. Has not yet made final proof. Can the county tax his possessory right? If so, can his water stock be sold for the taxes?—Subscriber, Holtville.

Government land is not subject to taxation, and the land you mentioned in your inquiry is government land until the final proof is made and certificate issued. The state has power to tax possessory right in land (and this has been construed to cover government land) and can enforce its claim for taxes by attaching and selling the personal property of the party owing the taxes. If there is no personal property, the possessory interest may be sold for the tax. A water right is property and may be sold for that purpose.—E. L. P.

Horse Left in Pasture.

What is the law in regard to horse left in pasture and not called for? Owner never called for the horse nor answered letters regarding it.—Subscriber, Los Angeles.

The civil code gives you a lien on the horse, which is dependent upon possession, but it also provides that if the amount due for the keep of the horse is not paid within twenty days after the same shall have become due, then the lienholder may proceed to sell the property to satisfy the lien and costs of sale, at public auction, and by giving at least ten days' previous notice of such sale by advertising in some newspaper published in the county in which the property is situated.—E. L. P.

Milk Coolers, all sizes and prices. Guy F. Kelsey & Co., 106 East Eighth St., Los Angeles, Cal.

Money Making Little Liners

In this department we will insert your advertisement under a classified head for 1½ cents per word per issue. No ad accepted for less than 25 cents. Our classified columns are the clearing house for our many thousand readers.

LIVE STOCK

For Sale—Registered Berkshire pigs, old enough to wean. Their sire is out of a daughter of Star Masterpiece 102,000 and sired by Master Prince 95,656, he a son of Masterpiece 77,000, the sire of Star Masterpiece 102,000 that sold for $5,500. Dams are of Masterpiece breeding, others out of sows of Longfellow breeding and sired by Robin Masterpiece 3rd 142,363, stock not closely related. Also two registered Jersey bull calves, sired by Brown Lassie's Advocate 80,045, he a grandson of Diploma's Brown Lassie 166,688, second in classes A and B, World's Fair butter test, St. Louis, 1904, and out of high testing dams. Write for price and pedigrees if you mean business. Money refunded if stock is not as represented. G. C. Dickson, National City, Cal.

Stallions for Sale—Acclimated animals. All harness broken, sound and gentle. Leader 40637. Dapple gray, 8 yrs. old. Ladoga Leon, 66619, 2 years old. Dark gray. Dam weighs a ton. Liberty 74310. Black yearling. These three are registered in the Percheron Society of America. Atwood, bay carriage stallion, 2 yrs. old. Solid color. Sired by Athadon, 1st dam by Junio, son of Electioneer. McKinney Don, 2 yrs. old. Solid bay with black points. Sire Stanford McKinney. 1st dam Belladonna, standard by trotting record. 2nd dam by Athaneer. Both well broken to buggy. Minnewawa Stock Farm, Fresno, Cal.

Thoroughbred Belgians, White Angoras, New Zealand Reds and Silver Grey Flemish Giant Rabbits. List free. Caldwell Bros., Los Angeles, Cal.

Dairy Floating Thermometers and all kinds of supplies for the dairy at Guy F. Kelsey Co., 108 E. 8th St., Los Angeles. Phone Sunset Main 7406.

For Sale—Shorthorn bulls and Berkshire hogs. Bred for size and quality. H. L. Murphy, Perkins, Cal.

Three Holstein Friesian Bulls, splendid young animals for sale, well marked and subject to registry. Write at once to Geo. G. Roeding, Fresno, Cal.

WANTED

Local Representative Wanted. Splendid income assured right man to act as our representative after learning our business thoroughly by mail. Former experience unnecessary. All we require is honesty, ability, ambition and willingness to learn a lucrative business. No soliciting or traveling. This is an exceptional opportunity for a man in your section to get into a big paying business without capital and become independent for life. Write at once for full particulars. Address E. R. Marden, Pres. The National Co-Operative Real Estate Company, L 448, Marden Bldg., Washington, D. C.

Manager of Orange Property—Have had wide experience in handling orchards and alfalfa. Wish position as manager or in directing labor. Specially wide experience with the citrus. Address Y, Cultivator Office.

DAIRY SUPPLIES

Have You a Cow?—Have you a creamery? Have you a cheese factory? Write us. Everything used in either a dairy, creamery, cheese factory, or for handling milk, cream, butter, or cheese. We are in a position to quote you prices on entire creamery or cheese-making outfits. We make a specialty of only the latest and best sanitary machinery and supplies. Send us a list of what you want and we will quote prices which we feel certain will interest you. O. J. Weber Co., 225-227 East Sixth St., Los Angeles, Cal.

GUY F. KELSEY CO.

Full line of dairy supplies. Come in, phone or write. Generous sample of Prosperity Washing Powder given on request. 106 East Eighth St., Los Angeles, Cal. Phone Main 7496.

Agricultural Implements—Vehicles

For Sale—Agricultural implements, vehicles. Splendid values, lowest prices, liberal credit. See us without fail before buying. Catalogs mailed out of town customers. Write us describing what you wish to buy. When in the city a personal call will show the largest stock and assortment in the Southwest. Arnott & Company. Established 1892. 112-118 South Los Angeles Street, Los Angeles.

Send for our large vehicle, fence and harness catalogue. Consolidated Vehicle Co., 1660 Mission St., San Francisco.

TREES

One thousand one and two-two Eureka Lemons, two thousand two-year Valencias, sweet and sour orange seed bed trees, five hundred camphor trees. Southland Nurseries, F. H. Disbrow, Prop., R. D. 1, Pasadena.

For First-Class Valencia and Navel Orange trees and Eureka lemons, see A. G. Snow, Oxnard, Cal.

Fine line of Navels—Valencias and Eureka lemons for delivery spring of 1911. Contract now and get the first choice. The King Citrus Nurseries, Whittier, Cal.

For Sale—500 Choice Valencia Orange Trees and some Washington Navels. G. W. Thurston, R. F. D. 6, Box 82, Los Angeles, Cal.

RARE PLANTS

Wild Plant Improvement Gardens, Santa Ana, California. Newton B. Pierce, proprietor. Rare choice ornamentals and new fruits from all lands.

Tropical and Semi-Tropical Fruits and Ornamentals. Headquarters in California. Montarioso Nursery, Santa Barbara, Cal. Descriptive, illustrated price list free.

Ferns for growing on Adiantum pedatum 5c, Pteris serrulata 3c, Aspidium tsusimense 3½c and 5c. Terms cash. Ballou's Nursery, Pasadena, Cal.

SEEDS

Ahuacate (Alligator Pears, Avocados), Persea Gratissima. New crop is now coming from Mexico. None better for stock. $4.50 per 100; $40 per 1000. Montarioso Nursery, Box 1500, Santa Barbara, Cal.

FARM LANDS FOR SALE.

Money Making Lands in Famous Pajaro Valley—Soils that will grow anything. One 1,000-acre tract suitable for subdivision; fine for fruit and poultry farms. Price $40 an acre. 70-acre eucalyptus proposition, 60 acres in 2 year old trees now 7 to 10 feet high; 10 acres in orchard. Apples worth $1,000. A pick-up at $8,500. For full particulars and list of 50 orchard bargains write to Farm and Forest Realty Co., Watsonville, Cal.

For Sale or Trade—230 acres Oregon land in the famous "Rogue River Valley;" fine fruit land, 40 acres cleared, balance in timber; located ten miles from Central Point. A good two-story farm house, large barn. Fenced with 17-wire "Page Fence." Schoolhouse on corner. Would exchange for Los Angeles country or city property, to value of $8,000 or $10,000. Price $65 per acre. Address J. H. Grace, Central Point, Ore. P. O. Box 203.

For Sale—A 20-acre farm for $20 cash and $20 a month; possession now; $90 to $125 per acre; your crops pay for the land. Rich, level land for alfalfa, oranges, almonds, grapes, cows, chickens; abundance of ditch water, for irrigation, for $1 an acre a year. Where else can you get this? In Oakdale Colony, near good town and railroad station. Climate delightful. T. Wiesendanger, 207 S. Broadway, Los Angeles, Cal.

FOR SALE— $7 PER ACRE.
400 acres, 6 miles from Escondido. Will make a fine stock and grain ranch. If you are looking for an investment, let us show you this.
F. J. CONRAD & COMPANY,
The Hustlers,
Escondido, Cal.

For sale or exchange for Los Angeles or Orange Co. acreage. 4 acres in city limits of Santa Cruz, $4000. 5 acres improved home place, $6000. William Richard, owner, 438 River St., Santa Cruz.

For Sale—Valuable real estate; 80 acres rich black soil, suitable for fruit, grain or alfalfa, one mile from Caldwell Station, near Wheatville. $75 an acre. Good terms, or trade city property. See owner. J. P. Bolton, 1753 K St., Fresno, Cal.

Sub-irrigated Valley Ranches near the sea. Good locations for citrus, walnut and lima beans. Good water. Also citrus land in Reedley coves, best location in the state for lemons and English walnuts. John T. Bramhall, care of Cultivator Office.

For Sale—15 acres, 8-room house, barn, well improved, near electric, in Orange County. $6,000, one-half cash. Owner, 1613 E. 25th St., Los Angeles, Cal. Phone South 289.

For Sale—Near Lancaster, Cal., bargains in improved and unimproved land. Also relinquishments for sale or trade. Some homestead land. A. S. Burnham, Box 451, Lancaster, Cal.

Try "San Joaquin Valley Rural Realty Co." Farm Lands. C. F. Calwell, Secretary, Waukena, Cal. He knows!

For Sale—18 acres, house, barn, chickens, ducks, hogs, cows, horses and all farming implements. D. N. Herkelrath, 1546 W. 37th St., Los Angeles, Cal. Phone West 5771.

Apple Orchards—Large and small, in the only apple producing section in California. The greatest section west of Missouri River. Write for booklet. Geo. W. Sill & Co., Watsonville, Cal.

EXCHANGES.

For Exchange—$1,000 equity in furnished, modern, 5-room bungalow, up-to-date. Balance payments $25 monthly, including interest. Rent pays it. 5 minutes to Broadway, fine location. Want auto, horses, cattle, small ranch. What? Owner gone east. Write 351 Bryan St., Los Angeles, Cal.

MACHINERY

For sale—Second-hand windmills, gasoline engines, wagons, buggies, harness. Disc, gang, walking, riding and side hill plows; slip, Fresno and wheel scrapers; 2 headers, 2 balers, seed sowers, spike tooth and disc harrow, mowers, rake, fanning mill, dry washer, disc cultivator, reaper, blower, anvil, eveners; road grader, road roller, Hurst two-horse sprayer, mining hoist, sundries.

WINDMILL OUTFITS.

10-ft. Fairbanks, 30-ft. 4 post tower, 60 ft. 2-inch galv. pipe, rods and brass cylinder, $48 f. o. b.; 12-ft. steel star 4 post tower, pipe, rods and cylinder, $60 f. o. b.; 13-ft. Aermotor, pumping and power mill, cost new $120, for $60; 12-ft. Aermotor, tower, 10,000-gal. tank, tank-stand, 100 ft. 3-inch pipe in well, rods and cylinder, $150 for this large irrigation outfit.

ENGINES.

4 H.P. Stearns in fine shape, 6 H.P. Fairbanks, 6 H.P. White & Middleton, 6 H.P. Union complete with No. 3 vertical centrifugal pump, $175 f. o. b.; 25 H.P. engine and hoist.

TANKS, TANKS, TANKS.

50 gallons to 50,000; 3000-gallon tanks at $29. Why buy new when we save you half and guarantee material? Demmitt Company, 120 N. Main St., Los Angeles, Cal.

For Sale—Complete pumping plants, new and second-hand. Electric and gas engine driven. All sizes. Send us your details for our recommendations, irrigating appliances and pipe molds. We can save you money on your installations. H. U. Roeding & Co., Foxcroft Bldg., San Francisco, Cal.

For Sale—Gasoline engines of different sizes, all thoroughly overhauled in our own shops by experts. Every engine guaranteed like new. Only standard makes carried. Before buying see Baillie & Brandt Co., 943 N. Main St., Los Angeles, Cal. We can save you money.

New Smith & Thomas hot air engine and deep well pump for sale at ½ price; also new International Gas engines at greatly reduced prices. Consolidated Vehicle Co., 13th and Mission Sts., San Francisco.

For Sale—16 H. P. Foos gas engine. Also 11 H. P. White & Middleton. Machinery Exchange, Main and Bruno Sts., Los Angeles, Cal.

NURSERY STOCK

For Sale—First class Eureka Lemon trees. Inquire D. N. Findlay, 218 Orange St., Redlands, Cal.

POULTRY

1889-1911—Barred Plymouth Rocks, Ocean Blue Strain. Birds of our breeding made a phenomenal record in the hands of our customers this season. Won first place at five of the largest Coast shows, besides many shape and color specials. Fourteen silver loving cups were won by this strain. We won in every class at the big Los Angeles Show—something no other exhibitor of Barred Plymouth Rocks can claim. Every female in pullet pen for this season is a winner either in pens or singles. Every male heading cockerel mated pens this season is a winner either singly or in pens. We are ready now for your egg orders. Same old price—$3 and $5. Mr. and Mrs. D. T. Wieland, Moneta, Cal. Take Redondo car via Moneta avenue. Get off at Illinois street, right on ranch.

All We Know is Rhode Island Red Chickens. But we know them so well that our baby chix, $15 a 100, are the best on earth. There! Pure blood, good strains, well mated by expert breeders. I. X. L. Poultry Yards, 587 Mission St., Santa Cruz, Cal.

How to Make Money—Mrs. A. Basley's New Poultry Book is just out. It is without exception the most wonderfully complete manual on the subject of successful poultry management ever written. The secret of how to raise every turkey hatched and the "Basley Formulas," now published for the first time, are worth many times the price of the book. The "Western Poultry Book" is a practical book by a practical woman. Price $1.00. Address Mrs. A. Basley, Box 77, Venice, Cal.

The Goodacre Strains—Just the time to get our Quality Reds, our special offer on eggs from choice matings of $3.00 per 15 or $5 00 per 30 is hard to equal; our commercial day-old chicks we now offer in 100 lots at $12.00; our Reds have been constant winners the past three years in our Coast shows. We can sell you choice eggs, Buff Orpingtons, Anconas and White Runner Ducks. Write us today. Goodacre Bros., Compton, Cal.

BONNELL'S S. C. BLACK MINORCAS WIN EVERY TIME.
At Los Angeles Show, 1911, every first premium and two silver cups; two specials for best male and female. Eggs at half price, $2.50 per setting. C. C. Bonnell, 2919 Brighton Ave., Los Angeles, Cal.

Baby Chicks from my pure-bred stock S. C. White Leghorns, carefully selected for laying and standard qualities. $9.00 per 100, $85.00 per 1000. Eggs for hatching $5.00 per 100. Correspondence solicited. J. R. Heinrich Poultry Yards, Arroyo Grande, Cal.

R. I. Reds—Much time may be saved in producing heavy layers by buying eggs from a breeder who has established a record by specializing in heavy laying stock. Eggs, hundred $5.00, finely pointed; 15, $3.00. "The Luedkes," Anaheim, Route 1.

Rose Comb R. I. Reds—Eggs one-half price balance of season. A few breeders for sale. Young stock later. Mating list on request. W. H. Pickering, 984 E. 55th St., Los Angeles, Cal.

Poultry Wanted—We pay the highest market price for all the local poultry we can get, no matter how large the quantity; also fresh ranch eggs. We remit immediately. Allaway & Layton Co., 607 E. Third St., Los Angeles, Cal.

White Leghorns—Buff Orpingtons. Bred for beauty and great egg production. Grand lot of both old and young stock for sale. Prices reasonable. Write your wants. Model Poultry Farm, Box H, Irvington, Cal.

White Leghorn Pullets—Heavy laying strain. We have 150 first class pullets, two-thirds grown, which we are going to sell at once. Prices reasonable. Few cockerels. Grand View Poultry Ranch, De Luz, Cal.

White Minorca Hens, 40 thoroughbred heavy laying strain, $1.25 each. Cockerels same price. W. W. Ellis, R. D. 3, Watsonville, Cal.

Hicks Jubilee Hatchery, now booking orders. Write us your wants. We use eggs from first-class stock only. Try us. W. J. Hicks, Petaluma, Cal.

Barred Plymouth Rocks—The kind that "Win and Lay." Eggs and stock for sale. C. H. Vodden, Los Gatos, Cal.

Rose Comb Black Minorcas, nine years line bred. Stock and eggs in season. Eleanore Minorca Farm, R. D. 1, Los Angeles, Cal.

FOR RENT

Imperial Valley Fruit Ranch to Let—160 acres in early table grapes, apricots, alfalfa and cotton; 2 miles from county seat. Tenant must have experience, and $3000 capital to furnish labor. Address Horticultural Dept., Box 2, El Centro, Cal.

HORTICULTURAL PRINTING

Catalogues for the seed and nursery trade, the live stock and poultry industries, are a specialty with us. Two thousand illustrations to select from. Write for prices and samples. The Kruckeberg Press, 237 Franklin St., Los Angeles.

DUCKS

For Sale—Mammoth Pekin and Indian Runner duck eggs. Now is the time to hatch to raise next season's layers. Eggs are running as high as 95 per cent fertile; 85 per cent guaranteed. 75 cents per 12, $5 per 100. A. E. Nelson, El Monte, Cal. **Breeders for sale**

MISCELLANEOUS

Free—"Investing for Profit" Magazine. Send me your name and I will mail you this magazine absolutely free. Before you invest a dollar anywhere get this magazine—it is worth $10 a copy to any man who intends to invest $5 or more per month. Tells how $1,000 can grow to $22,000; how to judge different classes of investments, the real power of your money. This magazine for six months free if you write today. H. L. Barber, Publisher, R. 430, 28 W. Jackson Boulevard, Chicago, Ill.

Guano, Guano, Guano, Guano, Guano. Mexican bat guano, carload in bulk, any quantity in sacks. Best fertilizer for all purposes and cheapest because unadulterated. Takes less, brings results. Address Guano Co., 221 Exchange Bldg., Los Angeles, Cal.

ALFALFA ALFALFA

Little Irrigated Farms

Merced County, in the San Joaquin Valley. 3000 acres in small tracts. Rich sandy loam soil, Santa Fe railroad crosses land. Two shipping stations. Surrounded by a highly productive district. Abundant water.

Write today for our descriptive booklet.

Merced Colonies

Send this to us.

Co-operative Land & Trust Company
595 Market St., San Francisco
Please send particulars on Merced Colony No. 2
Address .....
Name .....

AUCTION

225—Hogs—225
150—Laying Hens—150
Tuesday July 11, 10 a. m.

Corner of Soto and Joy Streets, Los Angeles.

Take Huntington Park-Santa Fe ave. cars on East Seventh st. to Joy st., walk half-mile east or drive out East Ninth st. to Soto st. and go one mile south.

This stock consists of 20 fine brood sows with pigs at side.
150 6-months old shoats.
58 8-months-old shoats.
15 fat hogs.
25 stock hogs.
6 sows, will litter soon.
5 boars, 15 months old.
150 laying hens.

This is an unusually fine lot of Poland China and Jersey Red brood sows and hogs. All healthy and in first-class condition. Owner has instructed us to dispose of same to the highest bidders on above date.

POSITIVELY NO LIMIT OR RESERVE.

TERMS: CASH.

RHOADES & RHOADES
830 South Main St. Los Angeles
AUCTIONEERS.

SELLING RAPIDLY.

Judging from the number of farmers in this immediate neighborhood who are leveling and checking their land for alfalfa, the Atwater district of Merced County is to become one of the largest alfalfa sections in the State. Hitherto the sandy loam of this district has been devoted chiefly to growing sweet potatoes, tomatoes, peaches and grapes. Returns from these products have been enormous. However, the market for such things is most uncertain and the local farmers are coming to realize that a staple crop such as alfalfa, with its attendant possibilities in the way of dairying and hog raising, pays best in the long run.

Over 1000 acres will be planted to alfalfa this fall in Merced Colony No. 2, a tract of sandy, loam land lying north of Atwater. V. H. Gerard, local manager for the Co-operative Land & Trust Co. of San Francisco, which is colonizing this tract, said yesterday: "The demand for alfalfa land in this part of Merced County is greater than we have ever known before. Of course, there are more settlers coming to California this year than ever before, but the proportion of those who want alfalfa land is way ahead of any previous year."

A TRACTOR ENGINE.

As a factor in farm development there is nothing to compare with the modern tractor engine. It is the embodiment of power; the iron horse, the stalwart mover of things movable. A tractor will do the work of several dozen horses, keep at it day after day, never tire, and accomplish more work at less expense than by any other method.

The tractor engine is the farm-horse of the future. As things grow bigger and better; as we step from one improvement to another in rapid succession, we will soon step into the exclusive use of the tractor engine for general farm work.

And so, with a look forward and a thought of how past methods have changed, it is advisable to be prepared in advance for the coming power. You can know about this engine for very little trouble. The Johnson Tractor Company of Sunnyvale has issued a very attractive and readable book covering every phase of the subject. It will be mailed free.

A picture of this latest improved tractor may be seen on page 7 of this issue.

GET THIS BOOK.

It is entitled "Agricultural Pumps" and is issued by the George E. Dow Engine Company, 413 Sheldon Building, San Francisco. It will be mailed free. Every agriculturist should know about pumps. Knowledge of this kind is valuable and worth money. When you can get this information free, just by writing for it, there is no excuse for not accepting this opportunity.

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Our immense store—more than 150,000 square feet of floor space (to be increased June 1st by an addition of another great eight-story building, half as big as our present building), together with our mammoth warehouses—in all more than 500,000 square feet of floor space—contain the largest stock of furniture, carpets, Oriental and domestic rugs, draperies, wall papers, upholsteries, mattresses and bedding, linens, stoves and household wares, china, glassware, etc., etc., in the United States.

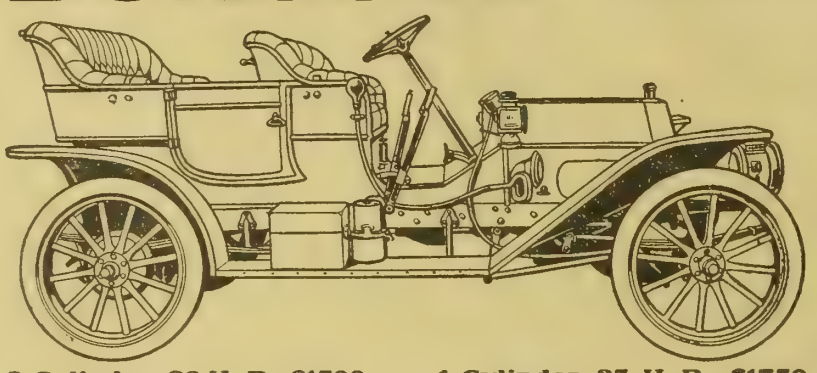
We pack goods carefully and ship promptly to any point.
It will pay to buy of us if you live anywhere west of the Rocky mountains

Write to us, if you cannot visit our store in person. Our Mail Order Department will furnish prices on anything you may need in our line, with pictures or photos of furniture if necessary.

Barker Bros.
ESTABLISHED 1880

724, 726, 728, 730, 732, 734, 736, 738 S. Broadway, Los Angeles, California.

DUROCAR The Car for the Farmer



2-Cylinder, 26 H. P., $1500 **4-Cylinder, 35 H. P., $1750**

Made in Los Angeles and factory open to your inspection. Come and see us.

Both Phones **Durocar Mfg. Co.,** 935 S. Los Angeles St. Los Angeles, Cal.

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Spend them in the

YOSEMITE VALLEY

NATURE'S MASTERPIECE.

A place of marvelous beauty and grandeur—

Enclosed by massive walls—

Adorned by stupendous water falls—

Special round trip tickets now on sale—

All Eastern one way and round trip allow stopover to visit the valley—

Beautifully illustrated booklet furnished on application—

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600 South Spring Street.
Arcade Station, Fifth and Central Ave.

Pasadena: 148 East Colorado Street.

When writing advertisers, mention Cultivator.

Household Department

GOOD MORNING.

Day dawns, and bids the blushing sky
"Good morning!"
The flute-voiced birds take up the cry:
"Good morning!"
And nearer home, beneath the eaves,
The gnarled old maple's tender leaves
That shivered in the midnight rain,
Now whisper at my window-pane:
"Good morning!"
The genial sun peeps o'er the hill
And laughs across my window sill.
Eyes quiver under sleepy lids—
This is the King himself who bids
"Good morning!"

I rise and ope the window wide.
The sun-kissed breezes charge and ride
Straight through the breach in merry rout,
And scale the walls and fairly shout:
"Good morning!"
They make me captive to the King,
They pluck at me and bid me sing
Their paean to the Golden Day,
Whose conquering slogan is their gay
"Good morning!"

They frolic here, they scamper there,
They clutch the singing birds in air,
On all the world their music beats
Until the captive world repeats:
"Good morning!"
Heart calls to heart. The surly wight,
Who scorned his neighbor yesternight,
With smiling visage stops to greet
That neighbor in the busy street:
"Good morning!"

O joyous day! O smile of God,
To hearten all who toil and plod,
We hail thee, Conqueror and King!
We hug our golden chains and sing:
"Good morning!"
—Catholic Standard and Times.

HOW BALAAM ABETTED.

Lydia Felicia Perkins.

The sunlight lay like a hot, white blanket over everything, and when there was even the excuse of a breeze the powdery dust whirled and settled like sifted flour on the drooping vegetation—the dog days had come.

Nancy Banks was sitting in a low rocker under the honey locusts, sewing; her father, near at hand, was mending harness. He was a big, stout man, and his open collar revealed a sinewy neck streaming with perspiration, but Nancy looked cool in her pale blue gingham. A charming face, Nancy's, but just at present pouting, and her voice was pouting, too—if anyone may use the expression—as she exclaimed:

"Pa, I don't know what ails you to be so ridiculous. Looks like"—and her eyes flashed as she chuckled—"you want to make yourself the laughing stock of the neighborhood."

Her father's red face grew redder as he tugged at the long needle, finally bringing it through the tough leather with a jerk.

"Well, Nancy," he said slowly, "you know what I've said. I don't know anything against Reub Martin beside him bein' as poor as turnip greens. Ascordin' to my notion, Sam Jackson's as good as he is, and a blame sight better chance."

"Better chance!" she echoed bitterly. "I can't bear him, Pa. I don't like the set of his mouth. There's a look about it of a man who'd beat a horse or bully a woman."

"Well, I ain't a judge of mouths, an' Reub has the chance of winnin' or losin' you," her father said, and shook with a laugh. "That is, if he ain't too proud stomached. Not many men who didn't want a son-in-law would give 'im the chance I have." His eyes gleamed with malicious fun.

"Well, if he'd do such a thing, I wouldn't let him," she cried with excitement and anger. Her fingers fumbled blindly with the delicate ruffling she hemmed. "Just think of the sport folks would make at you two racin' 'long the road——" She stopped, choked with tears.

Her father looked very implacable, for all of his fat.

"Nancy," he said brusquely, "if a man hain't willin' to stand a little foolin' and funnin' to git a gal, he hain't any grit, an'tomorry evenin' is Reub's last throw. I'll give him a fair start, seein' that you two have to go in a buggy, but when you've crossed the creek I'll let Balaam have his head, and if I catch up with you Reub Martin must stop courtin' you." He got to his feet and wabbled away to the stable, looped about with harness.

Nancy bent smarting eyes over the dainty dress she was making. The reasonless singing of a grasshopper in the scorched field to her left irritated her, but the unlatching of the gate and the coming of Sam Jackson mounted her irritation into inhospitality.

"Good evenin', Miss Nancy. Pa home?"

"Yes, he is!" truculently.

"I'll just sit down and wait for him."

No answer.

He seated himself in Banks' vacated chair, swung his big, booted right leg over his left, and looked under his drooping slouch hat straight at Nancy. He was thinking.

"What a fine lookin' girl she is! The peartest in the county." His light eyes kindled. Then he spoke aloud.

"Say, Miss Nancy, did you ever see my place down near the crick?"

"Yes, and it looks mighty run down and neglected," she said frankly.

He fingered the strap on his bootleg and dropped his voice.

"It needs a woman in the house," he began, significantly.

"And a man in the field," she ended unkindly.

He bit his lips, but tried to laugh. He rose and took off his hat to brush back his hot hair.

"I won't wait for your pa now, Miss Nancy, but I'll be around tomorrow night." He stood over her, looking down into the flushed, rebellious face. "I want to see you tomorrow, too," he added, with meaning in his voice.

She answered nothing, and he vaulted to the saddle of his horse, giving a last, unreadable look, while the mouth she didn't like twitched disagreeably, then he struck his horse with a sudden sharp blow and went away at a gallop.

When Reub Martin came that night, Nancy told him what her father had said. He was a big, lithe fellow, with a curly head like a bed of live coals, and eyes of burning blue. To Nancy's surprise and annoyance, he laughed and answered:

"I'll take my chances, sweetheart."

"And be the laughin' stock of the county," she sobbed.

"No, shucks, Nancy!" he said heartily. "I guess I can stand a little bit for you. Nobody would laugh at you, Nancy." He bent his face to her tearful one fondly. "And every other fellow in the neighborhood would want to be in my boots so bad they'd be just mad at me."

"Sam Jackson's coming over tomorrow night," she went on gloomily.

Reuben's eyes sparkled.

"Nancy," he said with steady lips,

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"promise me you'll take your father at his word and go with me when it comes to the time. Then when Jackson rides up here tomorrow, we'll be to town havin' the knot tied."

"If pa don't catch us," his sweetheart broke in dolefully. "He's goin' to ride Balaam." With a fresh burst of woe. "He's the fastest mule pa's got."

And some of Reub's good spirits deserted him, though apparently he was stout-hearted as ever.

The next afternoon, promptly at three o'clock, Reub Martin drove up to the Banks' front gate, swung out of his new buggy, and came into the yard. When the gate latch clicked, Nancy, in her pretty white dress, her cheeks as colorless as the lawn, appeared on the front porch. She hesitated there and looked as though she would retreat, but the sound of her father's shout in the horse lot, where he was saddling Balaam, set her in her resolution.

"Come, dearie," her lover called, gently. He looked tender and trustworthy and comely in his blue suit—his newly shaven face healthy and attractive.

With a little sob, Nancy ran to him, and he lifted her up in his arms, held her against his breast passionately for a moment, then placed her in the buggy and seated himself beside her.

He turned a smiling, dauntless face to Banks, who stood grinning by the side of the ready-saddled mule.

"Good day, sir!" the young man called, and lifted his straw hat.

Banks shook his whip gayly after the receding buggy, and watched it till he saw the wheels splash up the water in the creek. The horse stopped to drink, then crossed to the other side and began to mount the opposite hill. Now was Banks' turn. He threw himself into the saddle, stuck the spur deep into Balaam's pampered side, and loped down the road, a grim mirth in his face.

There seemed to be no question as to the outcome. Banks shouted gleefully to the fugitives, and plowmen following a languid furrow paused to watch the unique race. The dust spurted up from the hoofs of the mule, and he tucked his head down and turned back his wicked ears and drew a cranky stitch above his twinkling eye, then with a heartfelt snort plunged into the clear water of the sandy creek, and paused with such abruptness that Banks nearly went over into the water. And there the mule paused, and while the father strove in vain with the obstinate animal the elopers looked back at him with childish simplicity; and, waving good-bye, hurried on to the next town and were made one.

For a while anger occupied the mind of Banks, then suddenly amusement took its place, and he turned the head of Balaam, who moved nimbly enough in the direction of home.

He had just turned Balaam into the lot and was making himself comfortable under the honey locusts when Sam Jackson cantered up to the gate, his horse in a lather.

"I want to tell you," he said, breathing fast from hard riding, "that I met Miss Nancy goin' to town with Reub Martin in his buggy."

Nancy's father looked at the perturbed suitor—at his painfully spruce attire—then a slow, appreciative smile spread over the waves of fat.

"You did? P'r'aps you might have. She and Reub went to town 'bout a half hour ago. They're married by this time."

"Married! Why in blazes didn't you stop 'em?"

Banks looked thoughtful.

"I did allow to, but my mule was dead against it. He balked at the ford. You remember the Bible tells us about a donkey that once stopped because an angel stood in the way? I calculated today Balaam must have had some mighty good reason for stoppin'."

"Oh, go eat grass!" Jackson screamed, whirling about his astonished horse. He struck the unoffending brute several vicious blows over the head, jerked its mouth cruelly when it reared, then dashed away in a cloud of dust.

"Nancy was right," said Banks, looking after the furious rider. "A man that lets his spite out on a horse wouldn't treat a woman right. 'A merciful man is merciful to his beast.'"—Farm and Ranch.

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San Francisco-Los Angeles Produce Markets

Los Angeles Market

LOS ANGELES, July 5, 1911.

Butter.

Butter remains unchanged with light receipts.

Prices to trade 2½c in advance of the following Produce Exchange quotations:

Extras	22½
Firsts	21½
Ladies	18
Country	15
Eastern	21

Cheese.

Local Anchor	16
Oregon Daisy	16@16½
Northern Fresh	14½
Domestic Swiss	18
Imported Swiss	30@32

Eggs and Poultry.

A decided advance is noted in case count eggs with lighter receipts and very firm market.

Paying prices f. o. b. Los Angeles are:

Local Ranch, candled	28½
Case count buying price	24@26
Northern and Imperial	20@24
Eastern	21

Dealers pay for live poultry f. o. b.:

Hens, per lb	12@15
Roosters	8
Broilers	15
Fryers	18@20
Roasters	20
Turkeys	22@23
Ducks	14@15
Geese	15
Guinea hens, doz	4.00
Squabs, doz	1.75

Live Stock.

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs	7¼
Prime steers	6
Heifers	6
Calves, per lb	6½
Sheep, ewes, per head, shorn	4.75
Lambs, per head	3.75@4.25
Wethers, shorn	5.00@5.50

Potatoes.

Wholesale prices are:

Sweets, yellow, lb	15
Sweets, red	3.00
New potatoes, lugs	1.10@1.20

Onions.

Wholesale quotations:

Silverskins, ctl.	2.75
Bermudas, crate	1.75
Yellow Danvers	2.25
Garlic	8@10

Vegetables.

Wholesale quotations:

Artichokes, northern, doz	50@85
Asparagus, lb	5@7
Beets, doz. bunches	20@25
Bell peppers, lb	30
Beans, wax	5@6
Green chilis	12@15
Cucumbers, lugs	1.00@1.50
Cabbage, sack	1.00@1.25
Celery, new, doz	75@1.25
Carrots, doz	20@25
Corn, lug	50@75
Horseradish, lb	12½
Onions, green, doz bunches	10@15
Kolrabi, doz bunches	40
Leeks, doz	35@40
Lettuce, crate	75@95
Mushrooms, basket	3.50@4.00
Oyster plant, doz	35@40
Okra	4@5
Peas, lb.	3@5
Parsley, doz bunches	20@25
Parsnips, doz bunches	20@25
Radishes, doz bunches	15@20
Rhubarb, Strawberry	1.75@2.00
Spinach, doz	15@20
Squash, summer	35@40
Spearmint, doz	25@30
Tomatoes, Mexican, crate	1.25@1.75
Turnips, doz	30@35
Watercress, doz	25@30

Citrus Fruits.

Valencias	2.25@2.75
Grapefruit	1.75@3.25
Lemons	1.75@5.00
Limes, hundred	1.25

Fresh Fruits.

Wholesale prices on the market are:

Apricots, crate	1.25@1.50
Bananas	4@4½
Pearmains	2.75
Currants	8@10
Cantaloupes, ponies	1.25@1.50
Cantaloupes, standard	1.75@2.00
Cherries, black, bulk, lb	10@12
Cherries, white, bulk, lb	8@9
Currants, lb	8@10
Figs, box	1.25
Grapes, Sweetwaters, crate	1.10@1.35
Grapes, Thompson Seedless, lug	2.00
Grapes, Black, crate	1.50
Grapes, Malagas, lug	2.50
Loquats, lb	4@6
Loganberries	7@8
Peaches, lug	1.25@1.50
Pineapples	7@8
Plums, Clymans, lug	2.00
Pears, box	2.00
Dewberries	4@5
Blackberries	3@5
Raspberries	5@6
Gooseberries, lb	8@10
Strawberries	5@6
Watermelons, lb	1½@1¾

Dried Fruits.

Wholesale prices are:

Evaporated Apples, fancy, lb	20
Apricots	14@18
Figs, box	1.85@2.25
Peaches	9@10
Nectarines	10
Pears	13@14
Prunes	11@14
Plums	10@11

Beans Dried.

Wholesale quotations:

Limas	6.25@6.50
Black eyes	8.00
Pinks	6.25
Lady Washington	4.25
Small white	3.75@4.00
Mexican reds	5.00@5.25
Garvanzas	4.50
Bayous	4.50
Lentils	6.00@7.00

Nuts.

Wholesale quotations are:

No. 1 soft shell walnuts	18
Chestnuts	10@12
Almonds, IXL, lb	17@18
Pecans, polished	15@16
Peanuts, Eastern	8
Peanuts, California	6
Pine Nuts	18@20

Honey.

Wholesale quotations:

Extracted water white	9
Extracted light amber	8
Comb water white	18@19
Light amber	15
Beeswax	30

Hay.

Buying prices f. o. b. cars Los Angeles are:

Barley hay	11.00@13.00
Wheat hay	12.50
Tame oat	13.00@14.00
Alfalfa	12.50

Grain.

Wholesale selling price f. o. b. Los Angeles:

Wheat, new, cental	1.70@1.75
Corn	1.70@1.75
Kaffir	1.75
Millet	3.25
Popcorn	4.75@5.00
Egyptian corn	1.65
White oats	1.80
Rye seed	1.90
Seed barley	1.50
Broom corn	1.50

Feed Stuff.

Wholesale selling price f. o. b. Los Angeles:

Alfalfa meal	1.10
Cracked corn	1.70
Cracked wheat	1.95
Shorts	1.90
Bran	1.65
Oil cake meal	2.50
Feed meal	1.80
Rolled barley	1.50

San Francisco Market

SAN FRANCISCO, July 4, 1911.

Butter.

A slight advance is noted on butter. Market firm.

Price to trade 2½c in advance of the following Produce Exchange quotations:

California extras, lb	22
Prime firsts	21
California firsts	20
Seconds	19

Cheese.

Cal. flats	10@13
Cal. Y. America, fy, new	12½@14
Oregon, fancy	13½@14½

Eggs and Poultry.

Eggs show a material strengthening and quotations are generally higher.

Official quotations of the San Francisco Wholesale Dairy and Produce Exchange are:

Fresh ranch extras	23½
Prime firsts	22
Firsts	20
Seconds	17
Eastern seconds	15
Select pullets	19
Hens, doz	4.50@9.00
Fryers, doz	4.50@5.50
Ducks	5.00@7.00
Broilers	2.00@3.50
Roosters, doz	4.00@9.00
Geese	2.00@2.50
Pigeons	1.75@2.25
Squabs	2.00@2.50
Rabbits, doz	2.00@2.50

Live Stock.

San Francisco prices, gross weight:

Steers	4.50@5.50
Cows and heifers	3.50@4.75
Calves, lb	5@6½
Hogs	5@7
Wethers, No. 1, unshorn	4½@4¾
Milk lambs	5
Ewes, No. 1, unshorn	4@4¼

Shorn, ½ cent less.

Potatoes.

Wholesale market quotations:

New potatoes, cwt	2.00@2.75
Early Rose	2.25@2.50
New Burbanks	2.25@2.75

Onions.

Australian	2.75@3.00
New green, box	50@65
Red, new, sack	75@1.00
Silverskins	1.00@1.30
Garlic, lb, new	3@3½

Vegetables.

Wholesale quotations:

Asparagus, box	75@1.50
Beans, string and wax	1@2
Bell peppers	10@15
Carrots	60@75
Cucumbers, box	50@2.00
Corn, doz	15@40
Celery, crate	1.50@2.50
Chili peppers, lb	12½@15
Cauliflower, doz	75@1.00
Egg plant, lb	15@20
Lettuce, crate	75@2.00
Okra, lb	6@10
Peas, sack	1.00@1.25
Rhubarb, Strawberry	75@1.00
Summer squash, lug	70@1.25
Tomatoes, crate	35@65
Turnips	60@75

Citrus Fruits.

Valencias	2.00@3.00
Grapefruit	75@2.75
Lemons	2.00@5.50
Limes, Mexican	4.50@5.00
Tangerines, halves	1.25@1.50

Fresh Fruits.

Apricots, crate	60@90
Apples, Early Harvest	50@75
Apples, box	1.00@1.50
Apples, new, green, 20-lb box	50@1.50
Cantaloupes, ponies	1.50@1.75
Cantaloupes, standard	1.85@2.00
Cherries, white, lb	4@5½
Cherries, black, lb	6@7
Cherries, white and red	60@75
Currants, drawer	90@1.15
Figs, layer	40@50
Grapes, Thompson Seed	1.25
Grapes, Malagas, box	2.25
Peaches, box	40@75
Pears, box	75@85
Plums, box	25@60
Loganberries, chest	2.50@3.50
Blackberries, chest	4.00@5.00
Raspberries, chest	5.00@7.00
Gooseberries, drawers	75
Strawberries, Banners	7.00@8.00
Longworths	7.00@9.00
Malindas, chest	4.50@6.00
Pineapples, Hawaiian	2.00@3.50
Bananas	1.00@1.50
Watermelons, lb	1½

Dried Fruits.

DRIED FRUITS—1911 crop, f. o. b. carload lots, per lb.—Apples, 9@10c; Apricots, 14½@16½c; Peaches, 8¾@10¼c; Prunes, bluk basis, 4½@5¾c; per lb., 4¼@8c, with a premium of ½@1c on large sizes; Figs, 5@6c for White; Pears, nominal.

RAISINS—1911 crop; Seeded, per pkg. —Fancy, No. 16, 7½@7¾c; Choice, No. 16, 7@7¼c; Loose Muscatels, in 50-lb. boxes—Standard, 4-crown, 6½@6¾c; do, 3-crown, 6c; do, 2-crown, 5½c. Seedless—Muscatels, 5c; Sultanas, 6@6¼c; Thompsons, 6¼@6½c.

Nuts.

Walnuts, No. 1 soft shell	16@16½
Walnuts, No. 1 hard shell	14½
Almonds, '10, N P U	15c
Almonds, 10 Nonp	17
Almonds, '10, I X L	16
Almonds, Peerless	13½
Pecans	14@17
Chestnuts, California	6@8
Peanuts	5@5½

Beans Dried.

Limas	6.10@6.25
Pink	4.50@4.75
Black eyes	6.50@6.75
Small white	3.40@3.50
Large white	3.25@3.40
Kidneys	5.50@6.00
Garbanzos	2.50@3.25
Bayou	3.75@4.25
Horse beans	3.50@4.00
Red Mexicans	5.35@5.50
Cranberry	3.50@3.75

Hops.

Hops, coast, 1910	22@24
Hops, 1911 contracts	21@25
Hops, Oregon, 1911	21@25

Honey.

Water white, comb, '11	15
Dark comb	12½
Extracted white, '11	9@10
Extracted dark	6½
Beeswax, lb	24@30

Hay.

Scott, Magner & Miller say:

Receipts of hay for the week have been 2400 tons, which is about the same amount as for the preceding week. Considerable of this hay arrived by boat; the arrivals by railroad have continued to be light.

We have been receiving a few cars a day of the new crop hay, but the prices that have been realized therefor have not been satisfactory to the dealers, as it has been difficult to place the hay here on a basis of what has been paid for it in the country. Apparently the asking prices in the country at the present time are a little higher than the range of the market here in the city.

The new hay that has been arriving shows good quality, and appears to be above the average of last year's harvest. This is particularly gratifying as most of the consumers have been calling for a better grade of hay than they used to require.

There is no change in the alfalfa hay market from our last advices; there is very little coming in, and the demand is light.

We quote the wholesale prices in round lots on old crop on today's market as follows, viz:

Fancy wheat hay	13.50@14.50
No. 1 wheat or wheat & oat	11.00@12.00
No. 2 wheat or wheat & oat	10.00@11.00
Choice tame oat	10.00@12.50
Other tame oat	8.50@10.50
Wild oat	9.00@10.00
Stock hay	6.00@8.00
Alfalfa	9.00@10.50
Straw, bale	40@50

Grain.

Wheat	1.42½@1.50
Barley, fancy	1.28¾@1.30
Barley, good to choice	1.25@1.27½
Oats, white	1.50@1.60
Rye	1.50@1.60
Mustard, brown	5½
Alfalfa seed	18
Millet	3@3½
Flaxseed	5@5½
Broom corn seed, ton	25.00

Feed Stuff.

Alfalfa meal	14.00
Bran, ton	27.50@29.00
Feed cornmeal, ton	33.00@34.00
Cracked corn	33.00@34.00
Rolled barley, ton	26.00@27.50
Rolled oats, ton	29.00@30.00
Middlings	32.50@35.00
Oil cake meal	42.00@43.50
Cocoanut cake, ton	25.50@26.50
Mixed feed, ton	25.00@27.00
Shorts	29.00@30.00

Deciduous Fruit Market

F. B. McKevitt, general manager of the California Fruit Distributors, reports:

The following gives number of cars of deciduous fruit shipped from all points in California for the week (seven days) ending Friday morning, June 30, 1911:

Cherries—30¼ cars. This shows a considerable decline from last week's shipment, which amounted to 46 cars. Shipments will dwindle rapidly from this time on, as there are but few more cars to move.

Apricots—67½ cars. Not as much fruit of this variety was shipped this week as last, the difference amounting to practically 10 cars. The heavy movement is now over and shipments will decline rapidly. There will be a few cars available during the coming week.

Peaches—56 cars. A slight increase in the shipment of peaches is noticed, but it does not amount to a great deal. Triumphs are now nearly all shipped. There will be no considerable quantity of them to come in after this week, although one or two localities will have a few. St. Johns and Hales have made their appearance, but there will be very few of them available during the next seven days. After that the movement should be liberal.

Plums—71½ cars. This variety of fruit is now moving in liberal quantities and comprises many of the best known varieties, such as Climax, Burbank, Abundance, Shiro, Red Junes, Tragedy and Simoni. Shipments are probably as liberal now as they will be at most times during the season. The crop is good and quality is better than usual.

Pears—4¾ cars. There are some Bartletts going forward, but the movement is not heavy yet. It will increase from day to day, and by the 12th of the month the volume of shipments should be enough to meet all requirements. Fruit is clean and of good size.

The grape crop continues to look very well. No mildew or other trouble has appeared to injure the prospects, which are unusually good.

Weather is now settled into the regular article common to California summers—warm, pleasant, and in every way desirable for perfect maturing of fruit.

Citrus Fruit Market

LOS ANGELES, July 5, 1911.

The demand for Fourth of July fruit having passed and large quantities of other fruit filling the market, there is a slight weakening or shading of prices on Valencias. Some sales are still made at full quotations in favored markets and for exceptionally fine fruit. There is no intimation whatever of any material decline and within a week or two probably normal conditions will prevail.

The extremely hot weather has given a great boost to the lemon market and even indifferent fruit is commanding stiff prices.

Shipments.

Shipments of oranges from November 1st, 1910: 32,765 cars, lemons 5,142, total 37,907. To same date last season: Oranges 22,549 cars, lemons 3,546, total 26,095.

LOS ANGELES, June 30.—Seven cars Valencias sold.

	Avge.
Woodland, fy, Valencias, Santa Ana, shipped 28th	$2.15
Blue Ball, ch, Valencias, Santa Ana, shipped 28th	1.90
Woodland, fy, Valencias, Santa na, shipped 26th	2.12½
Blue Ball, ch, Valencias, Santa Ana, shipped 26th	1.87½
Woodland, fy, Valencias, Orange, shipped 24th	2.10
Sylvan, or, Valencias, Orange, shipped 24th	2.00
Blue Ball, ch, Valencias, Orange, shipped 24th	1.85
Woodland, fy, Valencias, Orange, shipped 23rd	2.10
Sylvan, or, Valencias, Orange, shipped 23rd	2.00
Blue Ball, ch, Valencias, Orange, shipped 23rd	1.85
Woodland, fy, Valencias, Orange, shipped 23rd	2,15
Sylvan, or, Valencias, Orange, shipped 23rd	2.05
Blue Ball, ch, Valencias, Orange, shipped 23rd	1.90
Woodland, fy, Valencias, Orange, shipped 22nd	2.10
Sylvan, or, Valencias, Orange, shipped 22nd	2.00
Blue Ball, ch, Valencias, Orange, shipped 22d	1.85
Blue Bar, fy, or, Valencias, Riverside, shipped 23rd	2.17½
Hemet Heights, sd, Valencias, Riverside, shipped 23rd	1.87½

LOS ANGELES, July 3.—The Pacific Coast Fruit Auction Company reports that their last sale for this season was held on Friday, June 30. They expect to open again, stronger than ever, on November 15, next.

NEW YORK, July 3.—Twenty-three cars Valencias, two cars seedings, two cars sweets, two St. Michaels and five cars lemons sold. Market lower on oranges, doing better on lemons. Fair and extremely warm.

VALENCIAS—	Avge.
Mahala, fy, L V W Brown	$2.95
Swastika, ch, L V W Brown	2.30
Knight, or, Ely Gilmore	3.20
Bishop, ch, Ely Gilmore	2.75
Rook, xc, Ely Gilmore	2.80
Florencia, xc, Randolph Ft Co	2.90
Royal Park, ch, Randolph Ft Co	2.50
Golden Flower, xf, Red, G O A	2.85
Corona	3.10
Corona Stds.	2.60
Old Mission, fy, C C Chapman	4.00

BOSTON, July 3.—Five cars sold. Very hot. Market doing better.

VALENCIAS—	Avge.
Homer, Q C Ex, Corona	$2.85
Butterfly, Covina Ex, Covina	3.00
Pine Cone, S B Ex, Redlands	3.35
Carrier, S B Ex, Redlands	2.15
Camel, Q C Ex, Corona	2.65
Teal, Covina Ex, Covina	2.75
Arrowhead, S B Ex, Redlands	3.00

PITTSBURGH, July 3.—Eight cars sold. Market easier oranges, stronger on lemons. Hot.

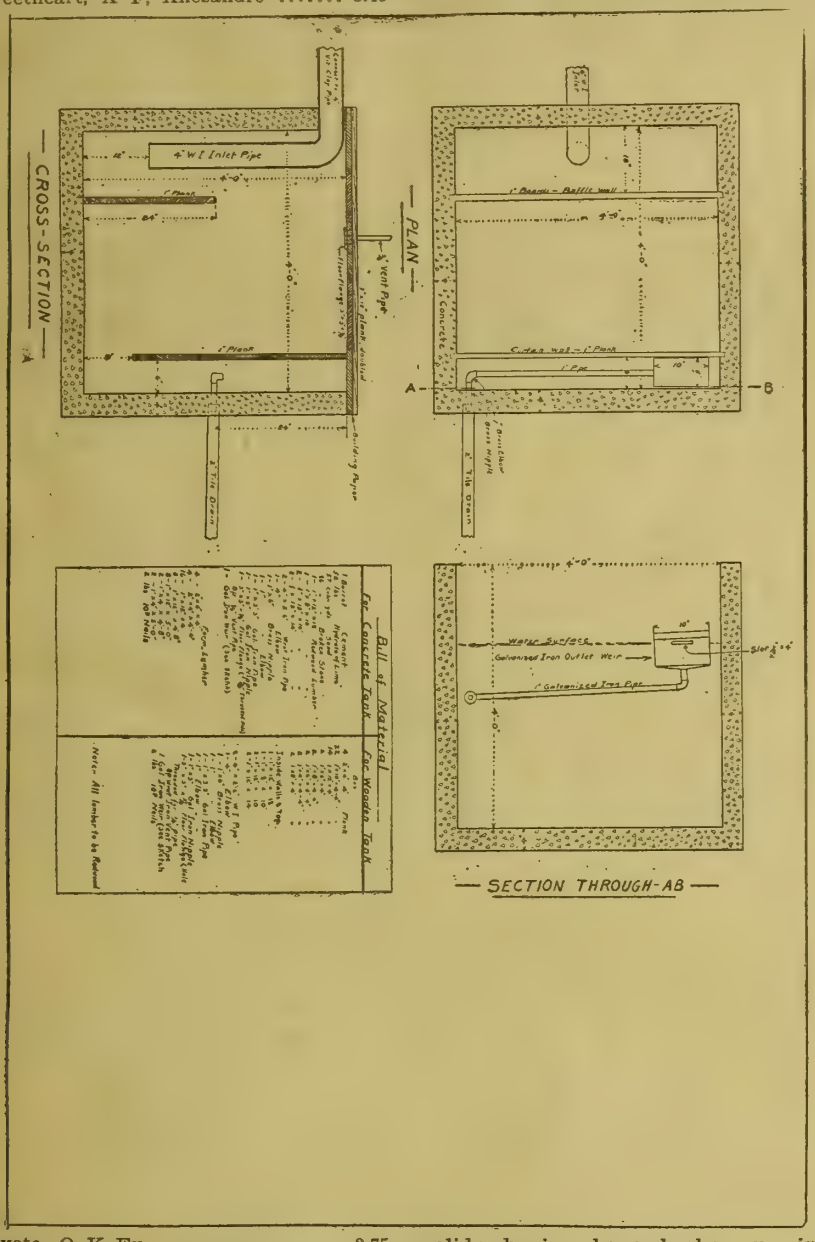
VALENCIAS—	Avge.
Shasta Daisy, xf, J Curtis Ft Co	$3.20
Sweetheart, A F, Allesandro	3.45

SMALL SEWAGE DISPOSAL WORKS

(Continued from Page 3.)

pense. The drawings given are of a septic tank estimated for an ordinary farmhouse with a family of from five to eight. It should accommodate the wastes from the toilet, bathroom, kitchen and laundry-tubs. The supplementary drawings show this tank combined with subsurface irrigation tiles.

The sewage flows from the house into the septic tank through the "inlet pipe," and is held there by the "outlet weir" for ten or twelve hours. During this time the solid bowel-discharges and other organic materials in the sewage are worked over by the "anaerobic" bacteria. The heavy inorganic "sludge" settles to the bottom of the tank and the lighter separated portion rises to the top to form the leathery "mat." If the tank works well, however, these two constituents are very small in bulk, most of the solids having been broken up into gases, materials which dissolve in water, and very finely divided particles which remain suspended in the water and pass out with the effluent.



The tank shown in the diagram is constructed of concrete.

The "soil pipe" from the house should be 4-inch vitrified clay, bell and spigot-jointed pipe. The cementing of these joints is specially important in the vicinity of trees and rose bushes, as their roots will utilize every opportunity to wedge into the joints. The outlet-weir is a simple device so arranged as to permit a constant discharge regardless of the intermittent inflow of the sewage from the house. If subsoil irrigation is planned, the effluent should be carried in loose jointed 2-inch tiles placed 12 to 18 inches below the surface and having a fall of from 2½ inches to 3 inches to 100 feet. In sandy soil the distributing pipes should total approximately 200 feet, in less absorbent soil the amount of distributing pipes must of course be increased.

The tank does not require a roof, though one may be provided as a matter of safety or appearance. Successful tanks have often been operated for six or eight years without being opened, though the majority of them accumulate enough heavy sludge in three or four years to make it desirable to clean them out. The sludge so removed may be readily disposed of by spading it into adjacent ground. The Kansas Board of Health in a similar discussion of the subject, previously referred to, states, "Particularly for those parts of the state where the rainfall is so small that the water of the sewage, as well as its fertilizing constituents, has an appreciable value, the disposal scheme outlined above may have a considerable economic as well as sanitary value. It is quite possible by this method to maintain in the dryest region a large, well fertilized, and well-watered lawn. The process should be carried on entirely without odor, though, of course, the septic tank should be located some little distance from the house—say a hundred feet or more, if possible. Particularly the disposal plant should not be near to any open well which is used as a source of water supply."

The expense of this suggested plant will vary in different parts of California. Any one can obtain prices, however, on the materials given in the diagram, and can accurately estimate the cost in his locality. In many parts of the state this cost would not exceed $25 to $30.

Coyote, O K Ex	2.75
Prairie Chicken, A H Ex, Arlington	2.70
Jasmine, D M Ex, Duarte	3.05
Peacock, or, Worthley & S	2.40
Eagle, A F Ex, Allesandro	2.85
Squirrel, A H Ex, Arlington	2.80
Spanish Girl, A H Ex, Arlington	2.45
Jasmine, D M Ex, Monrovia	3.20

PHILADELPHIA, July 3.—Two mixed cars and two cars lemons sold.

VALENCIAS—	Avge.
Sunny Heights, R H Ex, Redlans	$3.30
Golden Circle, R H Ex, Redlands	2.95
Pilgrim, Stewart Ft Co	2.80
Sunlight, R H Ex, Redlands	3.20
Mayflower, fy, Stewart Ft Co	3.10
Buena, sd, Stewart Ft Co	2.65

CINCINNATI, July 3.—Hotter. Market advancing on oranges, steady on lemons. One car Valencias, three cars lemons sold.

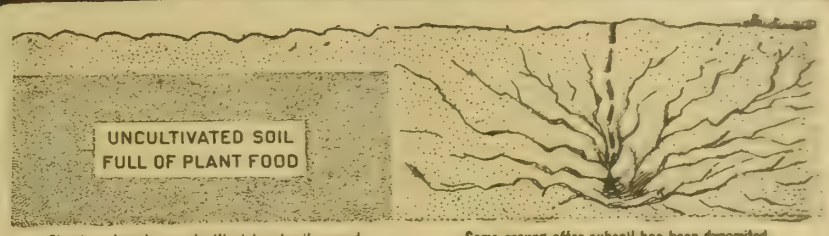
VALENCIAS—	Avge.
Pico, S T Ex, Whittier	$2.95

ST. LOUIS, July 3.—Muggy. Four cars sold. Market weak.

VALENCIAS—	Avge.
Echo, S T, Pasadena, wrecked car	$2.65
Eagle, A F Ex, Highgrove	2.20
Arroyo, S T, Pasadena, wrecked car.	2.45
Yankee Doodle, A F, Highgrove	2.45
LEMONS—	
Standard, V C, Limoniera Co	$2.10
El Azar, A C G, Azusa	3.75
Rough Diamond, V C, Limoniera	2.65
SWEETS—	
Eagle	$1.75
Yankee Doodle	1.80

CLEVELAND, July 3.—One car Valencias, three cars lemons sold. Market easier on Valencias, and firm, but prices lower on low grades lemons. Hot.

VALENCIAS—	Avge.
Duck, O K Ex	3.05
Prong Horn, O K Ex	3.40
LEMONS—	
Festival, S T Ex, Santa Barbara	$2.55
Lily, Q C Ex, Corona	2.45
Arab, S A Ex	4.00



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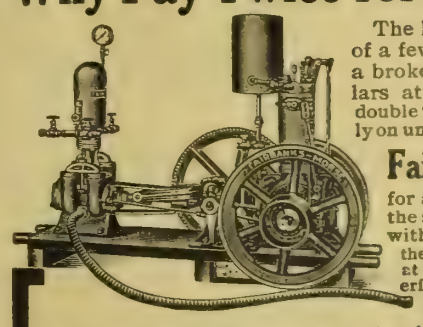

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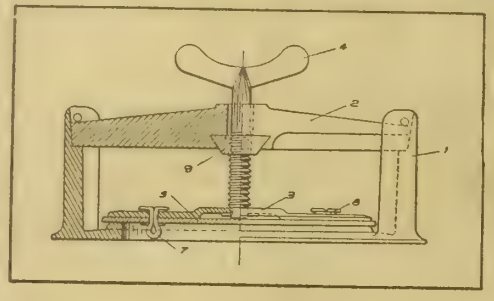

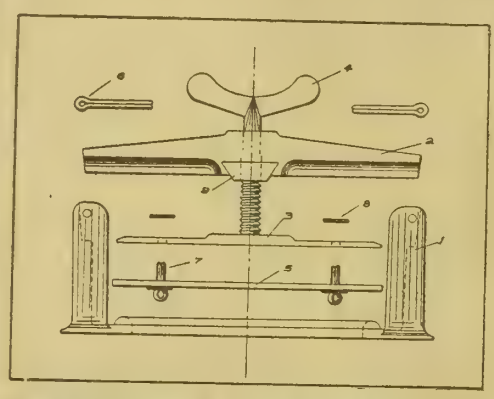

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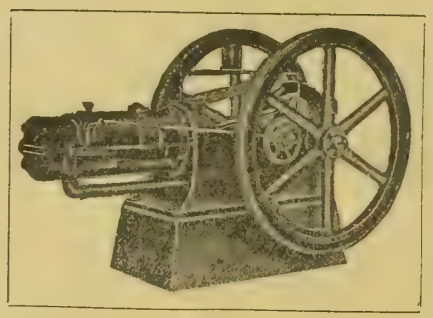

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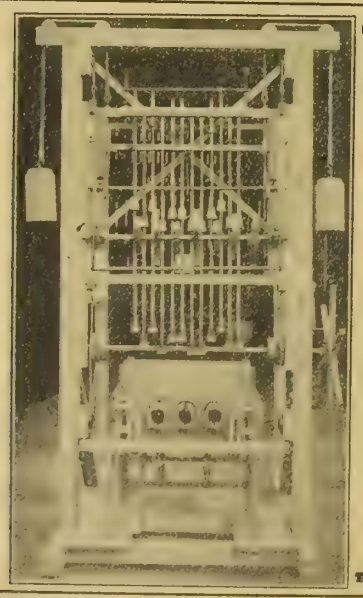

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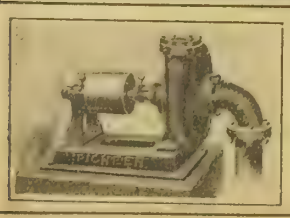

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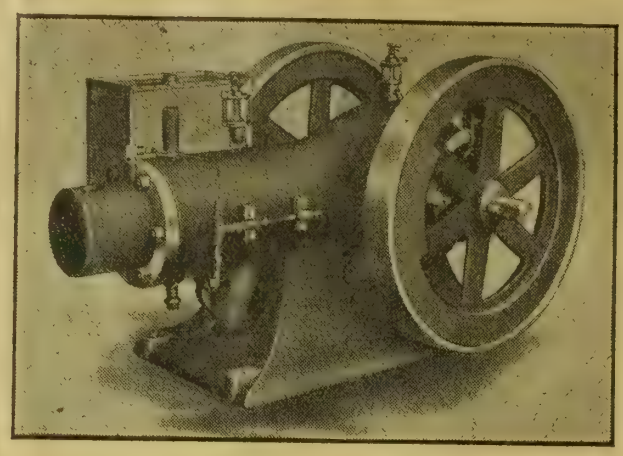

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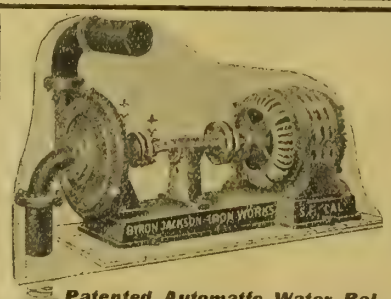

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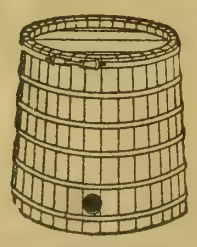

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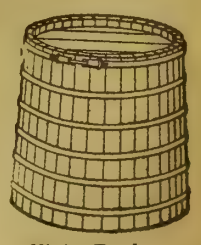

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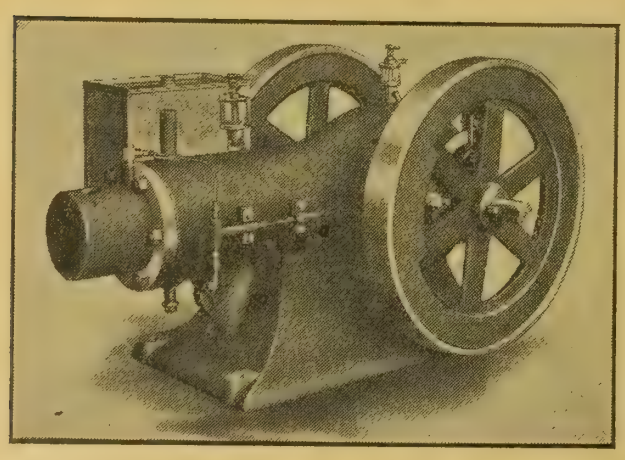

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California Cultivator

Vol. XXXVII. No. 2. LOS ANGELES: THURSDAY, JULY 13, 1911 One Dollar the Year

Rural Out-of-Door Adornment

An Address Before the Pacific Coast Nurserymen's Convention by Johannes Reimers, Stockton

There is considerable agitation in the larger cities of the new world in favor of breathing places, playgrounds and parking of streets and squares. Some cities have large and beautiful parks, others are contemplating and planning such. We hear comparatively little about beautifying the country. Perhaps it is because it naturally is so much more beautiful than the city. Yet what looks more hungry than miles and miles, yes, hundreds and hundreds of miles of dusty or muddy country roads without a tree to lend its hospitable shade to the weary traveler and gladden his sense of beauty, give relief to his tired eyes. What is more homely than a country school house with its barren windows staring at you, rising unconnected with the land upon which it stands with its bare painted walls and not a tree or a shrub to make it look homelike and inviting. And almost still worse—what is more uncivilized, more hopeless, more desolate than a farm house standing in utter loneliness in the endless grainfields with their summer glare without a climbing rose over the doorway and a bed of posies in the front yard and protecting arms of friendly trees reaching over the roof. Can you imagine anything more uninviting than a village where the street is unplanted and the heat of summer reflects from dusty soil and glaring housewalls, where the front yard is as unkempt as the backyard, where on account of the lack of trees and flowers you judge its inhabitants mean and stingy, uncultured and emotionless, where life cries to you as a mere miserable existence.

Nature made the country beautiful. Man has done his best to destroy its beauty. For he has constantly taken without giving. And yet—it is the country home—the rural district where lies the nation's hope. It is from there it must expect its best blood. It is from there it expects its honesty and integrity with its bread, why should it not from there also expect its fundamental culture?

There are two vital reasons why rural out-of-door adornment is most desirable.

The first is the ethical reason.

The second is the simple commercial reason.

I believe that the first is the most important. Barren life surroundings, a childhood robbed of beauty, a motherhood with nothing but daily duties, means barren souls. And yet this is often the condition on the farm.

I believe I have found in every human being with whom I have become acquainted an inborn love of the beautiful. I believe the love of the beautiful to be the greatest saving power of humanity. The love of the beautiful brings with it gentleness, kindness and tenderness. More than that, it is the haven of rest for the tired mind. It stands back of all art inspiration and all art expression. A home in which there is but the constant striving for money or even merely for bread, where the beautiful is forgotten and absent, is never a happy home. Even the wild bird adorns his nest. In a home where beauty is not inherent the desire therefor is soon forgotten. Its results are a hard grasping nature and a small selfish life often spiced with the poison of slander, and very apt to be immoral. We are busy people. We are upbuilding a great new land where nature has outdone herself for us. We have gone into the wilderness not alone with the plow but also with the ax and the gun and the sword. We have set fire to woodlands and wild pastures. We have cut down our great stately oaks of the valleys. It is time for us now to plant trees lest coming generations curse us for robbing them. Will it pay us to do it? Ethically it will encourage our inborn love of the beautiful, it will make us better, cleaner, bigger and more capable in every way. Have you noticed the wonderful inherent power of imagination in children? Give them life surroundings bare of beauty—a barnyard instead of a garden to play in, and their ever-seeking imagination will lead them into a barn-yard life. Give them trees and flowers where birds and butterflies come, and long shaded highways to school and between the homes. In their school yards plant trees and shrubs and flowers from many lands, and you will find open glad eyes to meet you, eyes that are wondering and seeing far, and back of them souls which go on far journeys to these far lands whence the trees came, and of such souls are the truly great men and the great women in the world—the great in art, in literature, in humanity, in home and in the nation, to such belong the names which live with us from past ages, and the names to come which shall not be forgotten. I am not a pessimist, yet do I expect to see in the young generation which shall take the land after us very much thoughtless frivolity and very much lack of respect for anybody. There is a reason for this. But this is not the time and place to discuss it.

The beautiful pays. We are inviting people from the East and other lands to come and share our acres with us, to build homes, to till our fruitful soils, to enjoy our mild winters and healthful climate. We want the best kind of people to come West. We also want people of wealth to come here. We would like to make the lands west of the Sierra the playground of the nation; we want people to come and spend money among us—how can we better do it than by tending to our rural out-of-door adornment? In this paper I am particularly speaking of California, for it is the only land of the West I really know.

Every farm house should have planted about it beautiful trees. These need not be only ornamental. With the small subdivisions of land that are rapidly coming on it is perhaps important to make beauty practical and remunerative. But what great and stately trees are there not that are also fruit-bearing? Take the walnuts with their majestic spread of crown, what a background for a farmhouse, and their cousins the pecans and hickory, and surrounding a group of such the charming chestnuts of the old world and the new, and of the Orient! And to lend color to such a planting a crabapple tree with its load of delicate fragrant flowers in spring and its load of little richly colored apples in autumn. Then for a contrast in foliage a couple or three of the Prunus pissardii or Burbank's Vesuvius, which is still more handsome, and against the dark green of the walnuts a few large-growing varieties of figs rich in fruit and large gray-green foliage, and to finish up the group and give it outline, some Japanese persimmons clustered in with loquats and also a cluster of orange trees in several varieties running into a low shrubbery of purely ornamental character, with roses in abundance, and as screens hiding ugly features, bamboos, these great graceful grasses whose practical value we yet so poorly appreciate; and separating the garden from the farm either a free planting of shrubs and berries or a hedge of everblooming roses or of pomegranates with their delicious and refreshing fruits, or any one of the many other shrubs suited for hedging. And let me say it here, I think an untrimmed or rather unclipped hedge of flowering shrubs so far more beautiful than a hedge clipped into artificial symmetry, that from an artistic standpoint there is no comparison. Above all keep the formal or symmetrical garden away from the farm. It might have its righteous place as part of classic architecture and tiled court-yards in city surroundings. The farm garden should above all look free and natural, thus its trees and shrubs should never under any circumstances be planted in rows but freely as if put there by nature herself as a part of the surrounding free country. There are people who think a garden is no garden at all without a lawn. I must disagree with them. It is just as beautiful to have groups of shrubs with their flowers and forms and flanked by handsome perennial flowering plants and borders of annuals. And they are far less care when established, of constantly increasing beauty, far more interesting in every way than is any little patch of lawn. Of course, where one can have a good sweep of grass surrounded by trees and shrubs and flowering plants it is an entirely different thing. Then the lawn becomes a part of the landscape; but in the other case it is simply trying to be something it is not, and that in gardening is as bad as in anything else.

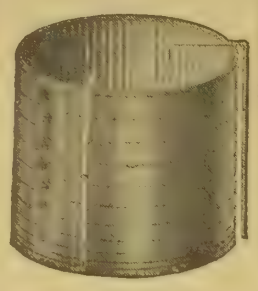
Around the school houses the trees should be both ornamental and instructive. For such planting both the industrial value should be considered and also to some extent give a lesson in imagination or even in geography.

Eucalyptus and acacias might tell of far-off Australian woodlands. Camphor trees, bamboos and cryptomerias and a few of the many shrubs that have come to us from Japan might give pictures to the child of that far-off country. The deodoras would give an idea of the forest of the Himalayas; the pines and spruces and maples and birches of the forests of the northlands and our own high mountains, even a little cement lined or puddled pond by the pump might illustrate the flora of some far-off river banks of some far-off country—thus send the child's mind off on far flights to widen the scope of its views to develop its all-important power of imagination.

The only way of undertaking a systematic planting of trees along our highways is to do so under municipal expense, control and ownership. It is the only way to get such plantings, the only way to get them systematically maintained and cared for, the only way to hold the marauder responsible. For that reason every county should have its forester, paid by the county well enough to induce men of knowledge and capacity to seek such positions. It seems to me the simplest thing in the world, and the only practical way. He should be allowed a fund to work on as is the superintendent of highways or the supervisor. It would even perhaps be well to have a state forester of highways, under whom the county foresters should work so as to insure a systematic and intelligent and connected planting the state over.

These plantings along the highways need not be purely ornamental. I have seen long stretches of excellent highways in Europe planted with fruit bearing trees such as apples and cherries and walnuts. The fruit from these trees paid for their culture and care and often for the whole maintenance of the road along which they were planted. This could also be done largely here. Where the roads are unusually wide and the soil either naturally moist or within easy access of watering the roadsides to some extent could be parked. That is, instead of planting trees singly they might be planted in groups of three and of a number of different varieties inter-planted with hardy and beautiful

(Continued on Page 34.)



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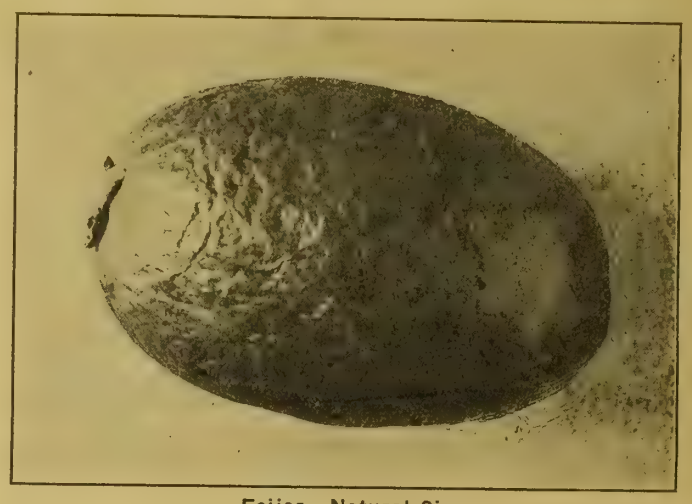
THE FEIJOA: A COMMERCIAL POSSIBILITY.

By F. W. Popenoe.

The feijoa is one of our more recent acquisitions of a subtropical nature which gives promise of becoming of commercial importance in the near future. While native to southern Brazil and Uraguay, it has proved hardy wherever tried in California, and is even grown outdoors in England, so that the area in which it can be grown in this country is necessarily a large one, and the question of hardiness, always an important one with introductions from tropical countries, is satisfactorily disposed of. It has been grown in California for ten years, and thoroughly proved its adaptability to this climate in every respect. But like almost all other fruits, when grown from seed it is liable to considerable variation; thus many of the fruits produced here have been of inferior quality. The only thing needed to set it on a firm commercial basis is the propagation of some of the finest varieties by some vegetative means. When this is done there is little doubt that the feijoa will take a place among California's commercial products, and the fruit will be shipped to all parts of the country. To be a commercial possibility, a fruit must be absolutely dependable in regard to quantity and quality of its crop, and this the feijoa in the seedling form is not.



Feijoa—Natural Size

In growth and character the feijoa (pronounced, according to the Century Dictionary, Fay-zho-a, accenting the middle syllable) much resembles the common guavas. It is in fact closely related to the guavas, all being members of the natural order Myrtaceae, or myrtle family. The plant grows to an ultimate height of eight or ten feet, making a very ornamental shrub, with brilliant and attractive flowers, silvery white in color, with a tuft of crimson stamens tipped with golden anthers, and foliage of a pleasing combination, glossy green above and silvery white beneath. Planted as a hedge it combines utility with beauty.

The fruits are about the size and shape of a hen's egg, green in color, with sometimes a touch of crimson on the cheek. The skin is thin, as in the case of the guavas. Next the skin is a layer of granular flesh, which surrounds a quantity of white, translucent, melting pulp, in which the seeds are embedded. The flavor of the fruit is one of the most delicious imaginable, combining the flavors of pineapple, raspberry and banana. This flavor combined with the aromatic odor which the fruits possess, is sure to be a winning combination. The seeds are from fifteen to thirty in number, and are so small that they cannot be felt in the mouth, being in fact no larger than strawberry or fig seeds.

The fruit is commonly eaten out of hand, but it can be cooked in almost any way, crystallized, made into jams or jellies, or prepared in numerous other forms, in any of which it is delicious.

The season of ripening is from November to January, but the fruits do not ripen on the bush. They will fall when mature, and can be then taken into the house and laid away for a week or two, when they will be in a fine condition to eat. They keep for a remarkable length of time, and can be shipped to any part of the country in perfect condition.

The culture of the plant is simple, and no difficulties of this nature will be encountered by any who attempt to grow it. While frequent irrigation during the dry season greatly encourages growth, the feijoa is a great drought resister; one of the original plants introduced from France ten years ago, growing on Dr. Franceschi's place at Santa Barbara, has never had a drop of water except from the skies, and yet has made a good growth and is bearing regularly. The plants usually come into bearing the third or fourth year from the seed.

This shrub was first brought to Europe by Edouard Andre, and being found well suited to the climate of Southern France and the Riviera, was planted quite extensively, and the fruit is now produced on a commercial scale. From France it was first introduced to America in 1901, by Dr. F. Franceschi of Santa Barbara, well-known as an economic botanist and introducer of new plants. The few plants which formed the first introduction were distributed over Southern California, and are almost all of mature size and fruiting prolificly and regularly at the present time. Numerous seedlings have recently been raised from them, many of which are just commencing to bear, and among which there is considerable variation in the size and quality of the fruits produced.

There seems to have been some misunderstanding regarding the introduction of this fruit, and Dr. Franceschi has been done an injustice by an ar-

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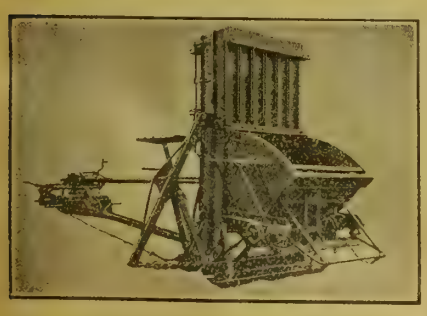

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ticle regarding Luther Burbank in a recent number of the Scientific American, in which the feijoa is illustrated and the statement made that it is a fruit never before grown in the United States. Dr. Franceschi's first importation from France was without doubt the first introduction, and these plants have been fruiting here for at least six years.

SEEDLING AVOCADOS.

Wishing information as to the action of seedling avocados in the Hawaiian Islands, where that fruit has been a favorite for many years, Mr. Ernest Braunton wrote Mr. J. E. Higgins, of the Hawaiian Experiment Station at Honolulu, and from him has the following:

"It is difficult to state what percentage of our seedling avocado trees turn out to be of clear commercial value. If you mean by this, what proportion turn out to be superior to those which we already have and which would, therefore, be worth while for further propagation, the percentage would be quite low. I have no accurate records from our station plantings, since these are now just beginning to come into bearing. The percentage of good trees is entirely too small to warrant anyone starting a seedling orchard as a commercial proposition.

"When grown from seeds the resultant trees do not bear fruit resembling that of the parent as closely as do seedling orchards of citrus resemble their parents. There is a very wide variation. Seeds from purple fruit may come green, and vice versa; those from a round or pear shaped fruit may be elongated. There is quite as wide a variation in bearing habits.

"We have succeeded in growing some plants from cuttings, but we do not regard this as a practical means for the propagation of the avocado. In budding we get from 80 to 90 per cent of successful buds on strong seedling, nursery or orchard trees when about one and a half or two years old. A well grown tree might be budded when it is a year old. In top working orchard trees the percentage may fall to as low as 50 per cent, but we expect between 60 and 75.

"We bud in nearly every month in the year if the trees are in such condition that the bark will slip. The months which we prefer are from January to July, and the earlier in this period the better. Our trees begin to put forth new growth about December or the first of January.

"I am glad to learn of your observations on avocado in California and to find that it does not appear to be too tropical in character for your climate. If it proves to be adapted to any large areas in California, it will certainly become an important industry."—J. E. Higgins.

Plainly it is a mistake to plant seedlings excepting with the expectation of working over.

ANNUAL PICNIC.

Prof. A. J. Cook, President of the Claremont Pomological Club, hands in the following, of interest to all who may be within reach of Pomona. He urges all in that vicinity to come with well-filled baskets because with the speaker who is announced there will doubtless be many from far away points to be fed, and Prof. Cook says:

"The Summer Picnic of the Claremont Pomological Club will occur at Ganesha Park, Pomona, July 15th, from 10:30 a. m. to 4:00 p. m. Prof. C. B. Lipman of the State University will speak before and after lunch. Prof. Lipman is one of the ablest men on soil economics and was a star at the recent memorable soil conference in Los Angeles, a fit companion of Dr. King, one of the greatest authorities of the world. Other speakers will be present and the day will be a very important one to all attending."

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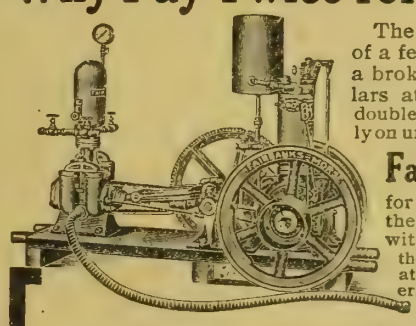

The lack of sufficient pressure or the loss of a few days' time in spraying season from a broken-down outfit will cost you many dollars at the end of the season—more than double the cost of your spray outfit. Is it safe to rely on unknown outfits when you can get a reliable

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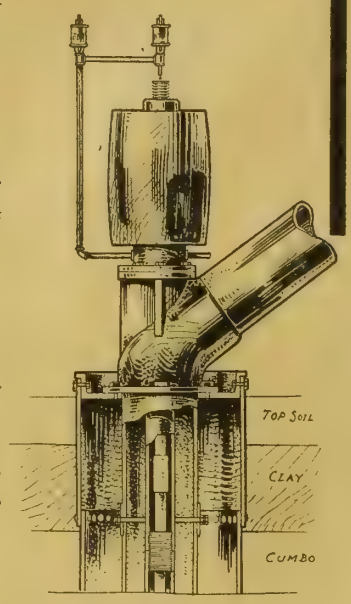
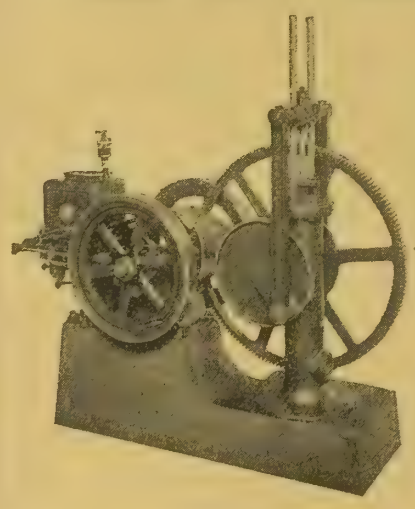


Showing the discharge pipe and pulley above the surface of the ground.

Have You Seen Gregory's Triumph Engine with Direct Connected Pump Jack?



If you have not, you have not seen the latest thing in a perfect little pumping plant. Note the simplicity of this jack; direct lift each side of the piston; no wobbling or jerking, but a smooth, even stroke. Engine is fitted with pulley, so that you can run the washing machine, the churn, the cream separator, and be such a handy little helper about the place.

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Deciduous Fruit Culture

PEDIGREED STOCK: DOES IT PAY?

We wish to make correction of the fourth paragraph in the second column of the account of the Pacific Coast Nurserymens meeting at San Jose, which appeared in the Cultivator of June 29th. In that we said:

"Pedigreed stock came in for somewhat of a discussion, but some confusion obtained as to what pedigreed stock is. The discussion was not as interesting as it would have been had not one firm taken advantage of the interest in the subject to advertise itself. We believe that nurserymen should take up the matter of pedigree, but they should also consider that pedigree means something."

As a matter of fact there was no general discussion on the floor of the convention, there being only one address on the subject and that by Mr. Leonard Coates of Morganhill. Reference in the above quoted paragraph to "one firm taken advantage of the interest in the subject to advertise itself" did not apply in any sense to the Leonard Coates Nursery, as it might perhaps be interpreted by those in attendance. In fact, the discussion was more in the halls and hotel lobbies. Several nurserymen spoke to the Cultivator representative along the line of the quotation in Mr. Coates address in the next to the last paragraph given below, "There are nurserymen who would seize the opportunity to advertise their stock by using the term pedigreed without the shadow of reason for doing so justly." The position which Mr. Coates takes below is exactly that of the Cultivator that every step should be taken to discourage the debasing of the word "pedigreed."

* * *

By Leonard Coates.

Nurserymen understand what is meant by "pedigreed stock." They may believe in it or they may not. There has been a good deal of discussion as to the correctness of the term, "pedigreed," as applied to plants. A "pedigreed" animal infers known parentage on both sides. With fruit trees, and other plants the female parent is often known, but not the male, and many of our best fruits are what is known as chance seedlings, both parents being involved in obscurity. Moreover, a flower, or a fruit (using the term "fruit" commercially not scientifically) may be pedigreed in the most literal and scientific sense, being bred by artificial methods, and still be worthless so far as any economic or commercial value may be considered.

The term "pedigreed," however, implies exceptional and fixed quality, and that is what we desire; no other name has been proposed, except "selected," which is meaningless. Pedigreed stock is simply propagated selected plants, whether bud variants, mutants, or by whatever name they may be known by scientists. I will not enter into a discussion of bud variation, or Mendel's theory of mutation, but merely call your attention to the writings of Mendel, Hugo de Vries, L. H. Bailey, and others.

There is at present in Southern California a systematic work being carried on under the direction of an expert sent out by Dr. Galloway of the Department of Agriculture, to segregate certain individual citrus trees which have made a record as to quality of fruit, good bearing habits, and general vigor, and to use these trees from which alone to propagate.

The leading citrus growers believe in bud variation, and its propagation, or perpetuation by budding or grafting, and are working to the end that their orchards may be improved by breeding up. Some growers already are budding over their bearing trees from these individual specimens. Such trees will surely be "pedigreed." An increasing number of fruit growers all over California believe in pedigreed trees, the theory and practice of selecting individuals from which to propagate being warmly upheld by Professor F. T. Bioletti, of the University of California, Mrs. M. E. Sherman of Minnewawa, and others.

Occasionally most distinct bud variations are met with, or sports, which are entitled to the classification of a new variety. My attention was first called to this variation, or individuality, in 1882, when studying particularly what we call "French Prune." I have a water color sketch, made at that time, showing the different types of the French Prune, but all propagated as one. These "types," or variations are just as fixed now as twenty-five years ago, and no one has endeavored to segregate them until I commenced this work in 1905 by propagating only from marked individuals.

But the question arises, "Does it pay?" And this question is paramount with the business man. Few of us can afford to be reformers or philanthropists. It pays, in theory, to sell good goods rather than poor ones. It pays, ethically, to do right rather than wrong. It pays, to some extent, by being advertised as progressive, or, which is generally the case, as a crank. I admit that this is its best feature, commercially. It does not pay when the majority of planters, encouraged by the facetious and skeptical attitude of some leading horticultural journals, regard it as a dose of nurserymen's buncomb, or species of humbuggery. It does not pay when the majority of planters take little or no interest in plant breeding, and even decline permission to examine and mark trees for buds. It does not pay whenever the planter who professes faith in pedigreed stock, refuses absolutely to pay one cent more for such trees, although that would not compensate for the great added expense of procuring buds from trees entitled to be called "pedigreed."

It might be made to pay handsomely, both nurseryman and planter, if the two would work in unison in the effort to improve the standard of our fruits. There are growers, of course, who would do this, as there are also nurserymen who would seize the opportunity to advertise their stock by using the term "pedigreed," without the shadow of reason for doing so, justly. The work, at best, could be but very gradual, although I have already seen a nursery firm advertising "pedigreed" apple trees for sale by the million!

Personally, I believe the work can only be done practically in a small way, by individual orchardists co-operating with some neighboring nurseryman, and thus actually propagating some known and fixed bud variation.

Farmers of Sacramento County are calling for another good roads bond issue.

COMMISSIONER REPORTS.

Ventura County has such an excellent horticultural commissioner that at the time of the delivery of his annual report the fruit growers of the country gather to hear it and engage in a general fruit growers convention. It has been asserted by some of the keenest fruit growers in the state that the Ventura commissioner is one of the best in the state. In "apologizing" for the amount of work he had accomplished, Mr. Essig stated in his annual report that he had been compelled to put in about fourteen working hours every day in the year. Certain it is Mr. Essig is one of the hard working young men interested in fruit growing.

The needs of the commission were fully appreciated by the assembly, and a committee, which consisted of E. S. Thacher, C. C. Elkins, N. W. Blanchard, Geo. C. Power and W. H. Fleet, was appointed to present the matter to the county board of supervisors and urge more liberal appropriation, that the scientific work now being done by Mr. Essig may be continued. The need for this is so great that Mr. Blanchard remarked in the convention that if the supervisors did not see fit to supply funds, he himself would advance the necessary amount.

Mr. Essig's report dealt with the organization of the commission, its business equipment, field equipment, spraying and fumigating outfits, and a description of the experimental work carried on. In addition, he listed the pests affecting the orchards of Ventura County. One of the worst has been the mealy bug, which Commissioner Essig has made his special study, accomplishing what has never before been done, the control and practical eradication of the pest by the use of the new carbolic acid spray which he has brought into use.

Another special work has been with the aphis, of which he is making a regular study. Ventura has not only quarantined some other counties which have pests it desires not, but certain sections within its own boundaries, in order to prevent shipment from mealy bug infested districts.

It is a satisfaction to notice the almost unanimous support which Mr. Essig is receiving from fruit growers and from his board of supervisors.

HORTICULTURAL MEETING.

The Los Angeles County Horticultural Society met at the Chamber of Commerce, Los Angeles, last Thursday evening and was addressed by County Commissioner E. O. Essig of Ventura County on Pests Affecting the Fruit Trees and Best Methods of Handling. Following the address a number of questions were asked, some of them by members of the Los Angeles County Commission. Some feeling was shown in the passing back and forth of charges, especially with reference to trees which had been passed by the commission of one county and inspected in the other. Later direct charges were brought against the Los Angeles Commission through letters introduced and read by the secretary, and it was said that other charges were in hand. The principal complaint so far as noted at the meeting related to the matter of overcharge where work of abating nuisances had been attempted by county direction. One of the attendants charged that the inspector who went over his trees did not know a scale from a flyspeck, and the particular tree in question was sprayed to the injury of the tree but not to the eradication of the flyspecks.

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Here is the Goodyear No-Rim-Cut tire as it fits any standard rim. When you adopt this tire you simply reverse the removable rim flanges so they curve outward. They curve inward with old-style tires. This change can be made in ten seconds.

The rounded edge of the flange then comes next to the tire, and rim-cutting is made impossible.

No Hooks on This Tire

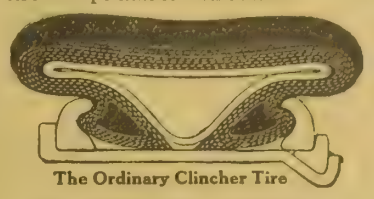
The ordinary tire—the clincher tire—has hooks on the base to hook into the rim flange. That is how the tire is held on. See the next picture.

When you use this type the removable rim flanges are set to curve inward. Note how they dig in when the tire is deflated. That is why the common tire will rim-cut if you run it flat.

Ordinary Clincher Tire

The No-Rim-Cut tire has no hooks on the base. It is held to the rim by flat tape, made of 126 braided wires, vulcanized into the tire base. These make the tire base unstretchable.

The tire can't come off because the base can't stretch. Nothing can force it over the rim. But, when you unlock and remove the rim flange, the tire comes off like any quick-detachable tire except that it won't stick.



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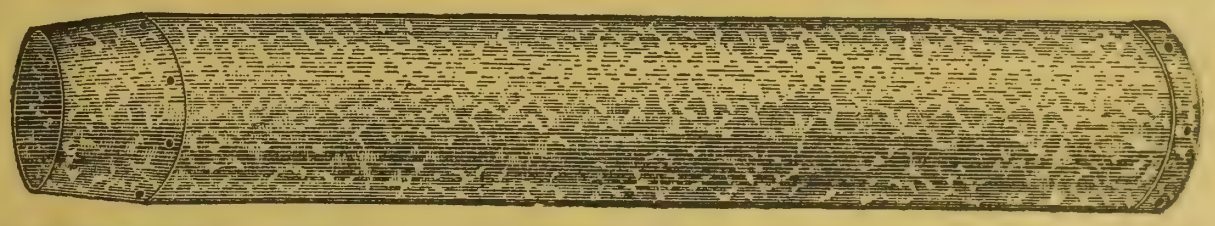

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30,000 feet	1½-inch	Standard, at	6c per foot
50,000 feet	2-inch	Standard, at	8½c per foot
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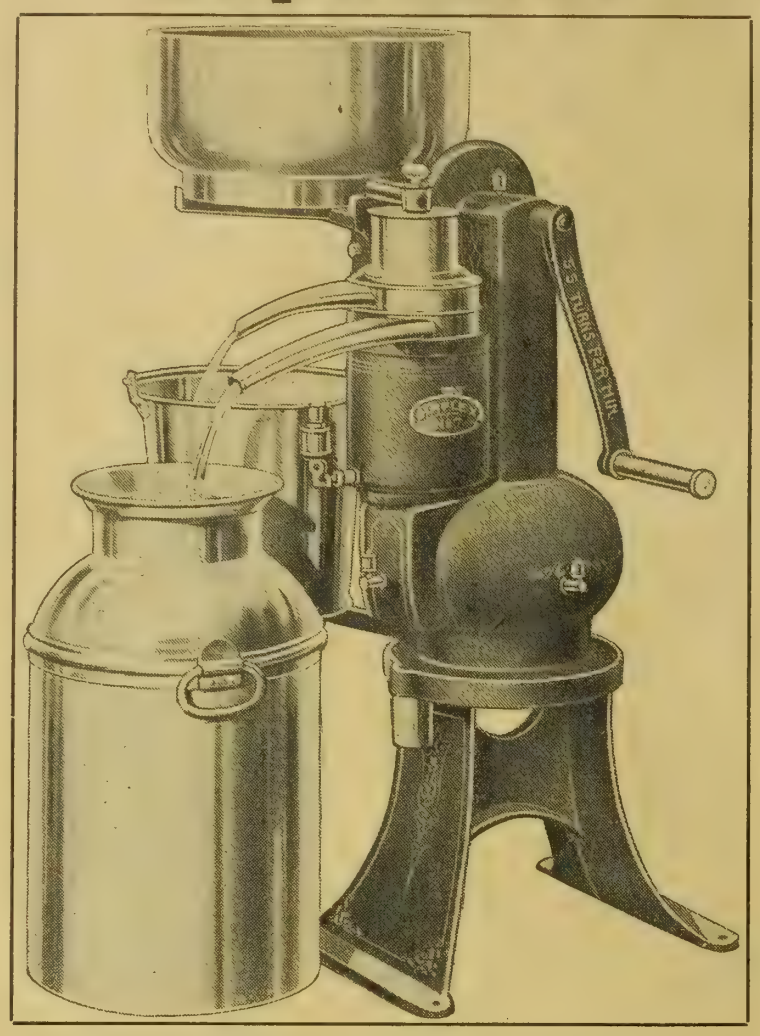

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MILK AS A FOOD STUFF.

We have in our library a book with the title, "The Work of the Digestive Glands." It is a reprint, in translation, of nine lectures by the eminent Russian physiologist, Professor J. P. Pawlow. It recites the results of fifteen years of experimentation carried forward in the most patient and scientific manner by Professor Pawlow and his able assistants in the laboratory of the Institute for Experimental Medicine at St. Petersburg, and has been accepted by physiological investigators all the world over as the most informing and accurate work in regard to digestion hitherto accomplished.

Following will be found the professor's discussion on the peculiar position of milk among foodstuffs:

Amongst all the articles of human food milk takes a special position, and this is unanimously recognized, both in daily experience and in the practice of medicine. By everybody milk is considered a light food, and is given in cases of weak digestion as well as in a whole series of severe illnesses, for example, in heart and kidney affections. The extreme importance of this substance, a food prepared by nature itself, we can now well understand. There are three properties of milk which secure it an exceptional position. As we already know, in comparison with nitrogenous equivalents of other foods, the weakest gastric juice and the smallest quantity of pancreatic fluid are poured out on milk, consequently the secretory activity requisite for its assimilation is much less than with any other foodstuffs. In addition, milk possesses a further important property. Thus, when it is introduced unobserved into the stomach of an animal it causes a secretion both in the stomach and also one from the pancreas, consequently it appears to be an independent chemical excitant of the digestive canal, and in this action it is remarkable that we perceive no essential difference in the effect when the milk is brought unnoticed into the stomach from that which occurs when it is given to the animal to lap.

Although flesh is a better chemical excitant, it is by no means a matter of indifference how it gets into the stomach. It must therefore be accepted that milk excites not only a really effective, but at the same time a very economic secretion, and also that the appetite is unable to stimulate this secretion into a more active or abundant flow. The secret of the relation of milk to the secretion of the digestive juices can, unfortunately, at present be submitted to no further analysis or investigation. We are at liberty, however, to suppose that the fat on the one hand is of importance for the inhibition of the gastric glands, and the alkalinity on the other for the restraint of the pancreas. Thus the gastric glands and the pancreas, notwithstanding the presence of excitants, are maintained by milk at a certain but not too high degree of activity, a matter which is in every way desirable in consideration of the easy digestibility of its constituents.

Finally, the third characteristic which is observed to belong to milk, and which is probably only an expression of the first, consists in the following: When one administers to an animal equivalent quantities of nitrogen, in the one case as milk, in the other as bread, and afterwards estimates the hourly output of nitrogen in the urine, it results that the increase during the first seven to ten hours after the milk (compared with the excretion beforehand) amounts only from 12 per cent to 15 per cent of the nitrogen taken in, while after bread, it amounts to 50 per cent. If the hourly rate of absorption and the extent to which milk and bread are respectively used up be taken into consideration, it has to be admitted that these augmentations of urinary nitrogen which appear soon after feeding, must be expressions of the functional activity of the digestive canal itself, and that this activity in the case of bread is three or four times greater than in the case of milk; consequently, in the case of milk, a much larger fraction of its nitrogen is free to be used up by the organism at large (irrespective of the organs of digestion) than in that of any other kinds of food.

In other words, the price which the organism pays for the nitrogen of milk, in the form of work on the part of its digestive apparatus, is much less than that of other foods.

How admirably, therefore, the food prepared by nature distinguishes itself when compared with all others!—Hoard's Dairyman.

NATIONAL DAIRY SHOW.

The Sixth Annual National Dairy Show to be held at the International Live Stock Amphitheater, Chicago, October 26 to November 4th, is expected to be the greatest educational and most comprehensive of any exhibition of this class of the Dairy Industry and all its allied interests previously undertaken. Not since the Columbian Exposition at Chicago and the great World's Fair at St. Louis, is it expected there will be such a congregation of conventions, dairy cattle, dairy products, dairy machinery, cold storage and refrigeration apparatus and the manufactured product of their allied commercial accessories.

The National Dairy Cattle Breeders' Associations with their membership of many thousands throughout the United States and Canada, recognizing this great annual exposition as the premier event of the year, have not only increased their appropriations, but are arranging to hold special conventions of their respective breeds during the exposition at Chicago, which will be attended by the most noted representatives in the broad field of dairy husbandry.

Fifteen thousand dollars will be offered in cash prizes for dairy cattle. Special premiums will be awarded in the milk, cream and butter tests. Scholarships in the National Student Judging contest will be given by several agricultural colleges, pure breed dairy cattle clubs, butter manufacturers and individuals. Preparations through special committees of the cattle clubs are being made to assist in bringing out not only a great show, in numbers of their respective breeds, but are planning to exhibit many of the most celebrated animals of the breed.

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Veterinary

Answers in this column by Fred G. Matthews, M. S., D. V. M., 1232 Central Ave., Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Back Injured.

A mare hitched to a hay wagon was struck by one of the heavy poles falling across her back. She seemed all right and worked one and a half days after the accident, then became stiff in the back and lost control of the hind legs. She has been down two days. She eats, drinks, urinates, and bowels act as usual. What can we do for her?—Subscriber, Princeton.

Displacement of fractured bones of the spinal column is sometimes deferred many hours or days—this may be a broken back. The fact that the bowels act indicate that paralysis is not complete, therefore I would advise you to nurse the animal a few days to see the results. Apply blankets soaked in warm water or heated dry and cover with heavy blankets to conserve the heat. Help the mare to her feet and support her in slings if the limbs are not completely paralyzed.—F. G. M.

Garget.

A cow six years old and a heavy milker at periods of about three or four weeks has fever in the udder, followed by clots in the milk. She experiences some pain while the clots are being forced out in the act of milking. What is the trouble?—C. X. A., Oroville.

Give the cow one pound of Epsom salts in water as a drench and follow with hyposulphide of soda, one tablespoonful in the feed, three times a day. Systematic hand rubbing with a little Iodine Petrogen applied during manipulations will aid in absorption of any diseased glandular tissue.—F. G. M.

Cough and Catarrh.

A mare, 12 years old, has coughed some for the past year. After drinking she coughs very hard. She has a discharge from the nose and, I think, through the mouth. Sometimes when she puts her head down both nostrils discharge freely.—Subscriber, Lompoc.

Evidently your mare has a collection in the cavities of the head from chronic catarrh. Cavities existing between the eyes and under the eyes may become diseased and fill with matter which often starts flowing when the head is lowered. Have your druggist prepare a powder containing nux vomica 3 ounces, belladonna 2 ounces, potassium iodide 2 ounces, sugar 8 ounces, and give one tablespoonful in the feed twice daily. Also give one tablespoonful of Fowler's solution in the feed with each dose of the powders. Some cases require surgical treatment.—F. G. M.

Slimy or Ropy Milk.

A cow 12 years old, in good condition, and having a calf four months old, yields milk which is apparently good, but when mixed with water, while washing the pails it makes the water thick and slippery. Should we use the milk?—Subscriber, Heber.

Look to the water supply for the source of this trouble. Mix some of the milk with water which has been boiled and cooled, and in all probability the slippery condition will not appear. Then mix a sample of the same milk with water which has not been boiled—a slimy consistency will indicate contamination of the water supply. Certain microbes which grow in water have a slimy coating around their bodies, and when water containing these microbes is mixed with milk the mixture thickens and becomes ropy—and this explains the mystery.—F. G. M.

Lameness—Swollen Eye.

A mare four years old and in the best of condition, became lame in one hind leg. A horse shoer examined the foot and claimed to have found a gravel and said it would come out next to the hair. Now it is in the other hind foot and one front foot. One eye and the side of the lips swell at times. This mare has not been worked.—J. R., Ione.

If this mare has not been shod and therefore has had no opportunity for nails driven too deeply to be the cause of the trouble, cracks must be forming at the juncture of the sole and wall. Matter forming in abscesses around the edge of the foot forces its way out at the hair if neglected. When such abscesses are located, they should be opened by cutting into the horn between the sole and the wall and thus allow free drainage from the bottom. Inject hydrogen peroxide into the cavity to remove the matter and pack the opening with cotton saturated with five per cent carbolic acid solution. Remove the dressing and repeat the treatment once daily.

Bathe the swollen eye and lips with warm water containing one tablespoonful of baking soda dissolved in each gallon.—F. G. M.

Splints.

Kindly advise treatment for splints in horses.—D. H. L.

Mix a half ounce of spirits of camphor and a half ounce of tincture of aconite, and in this mixture dissolve two drachms of bichloride of mercury. Apply with a feather and rub sharply with a cork. Repeat in three or four weeks if necessary. Splints may be removed from horses four years old or under, but in mature horses they may never disappear.—F. G. M.

Do your cows milk hard? Send 50 cents for teat expander. O. J. Weber Co., 225-227-229-231 East Sixth St., Los Angeles, Cal.

Costal Fistula.

A mare has a lump as large as a quart measure on the breast between the front legs. Matter flows from the tumor at times. At the time the lump appeared, seven months ago, the mare was slightly lame from contracted hoofs, but is now too lame to be worked.—M. C. C., Riverdale.

Tumors as described, occasionally appear between the front legs as a result of injury to the sternum or breast-bone, but such tumors are not often accompanied by marked lameness. Doubtless because of disease of the feet the animal has fallen and injured its breast, and, it is also probable that the increased lameness is due to an aggravation of the disease in the feet. A surgical operation is required to remove the tumors, but if not properly treated after the operation the growth returns.—F. G. M.

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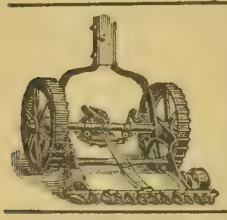

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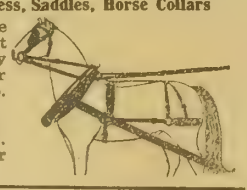

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The Ornamental Garden

HOW TO DESTROY PLANT LICE.

By C. P. Gillette.

This is the time of year when rose bushes, golden glows, boxelders, cherry trees and other plants are likely to be infested with lice that sap their vitality, and make them unthrifty. These lice are rather easily controlled with simple spray materials.

As these insects all get their living by sucking the sap of the plants upon which they live, it is useless to attempt to kill them by the use of poison, such as Paris green or arsenate of lead put upon the surface of the plants. They must be destroyed by the application of a substance that will kill by coming in contact with the exterior of their bodies. Among the most useful substances for this purpose are: kerosene emulsion that is about 7 per cent oil when applied; tobacco decoction made by steeping, a little below the boiling point, one pound of tobacco to each four gallons of water; or one pound of soap (preferably whale oil) to 8 gallons of water. Where it can be obtained, Black Leaf Extract, 1 part in 70 parts of water, or "Black Leaf 40" in the proportion of 1 part in 700 of water, is a very effectual spray for all plant lice.

A GOOD LAWN.

There is nothing that adds to the beauty of the home, more than a good blue-grass lawn. The most essential thing is to get the ground well leveled off before seeding; for it will never become level after seeded down. The leveling is best done with a length of railroad iron; drawing it back and forth until all the low spots are filled and the rail touches the ground along its whole length. If you cannot get a railroad rail, a timber will do the work. In seeding, use at the rate of one bushel of blue grass seed to the acre; but it takes two years to get a good sod of blue grass alone. To keep the lawn in good growing condition, it should have a good coat of fertilizer applied in the fall; not disfiguring your lawn with a lot of coarse stable manure, but using fine rotted manure, or still better, pulverized sheep-manure at the rate of 500 lbs. to the acre. After sowing the seed, do not rake in but cover all over with one inch of well-rotted manure. That will not bake and become crusted, in case of hard rains, as the dirt would. The young plants will come up readily through the covering, and it will insure a good stand and a fine lawn.—A. Brackett, Excelsior, Minn.

STALK-BORERS IN FLOWER GARDENS.

These are the worms which make holes in the stems of lilies, dahlias, golden glow, peonies, etc., causing the stalks to fall over. They come originally from weeds, and the eggs are laid at the base of certain weed-stalks in the fall, and hatch the following spring. A garden adjoining a weedy, neglected lot is apt to be troubled.

Sticky tanglefoot of medium thickness, which can be bought easily in large quantities, applied over a space of three inches wide on the outside of the baseboard of a fence, or a board barrier placed for the purpose, we have found to be an effective preventive, since the worms cannot cross the sticky band. This should be done early in June, and might call for more than one application, in order to keep the barrier sticky.—F. L. Washburn, Division of Entomology, Minnesota University Farm.

RURAL OUT-OF-DOOR ADORNMENT

(Continued from Page 27.)

shrubs. Imagine such a roadway in the interior valley of California. We had a sample of such outside the city of Fresno till ignorance under supervisorial management came in and trimmed and mutilated. The Kerney avenue outside of Fresno is really world-renowned. Palms, eucalyptus, and oleanders and pampas grass formed the parking which was planted symmetrically. I have seen no more beautiful roadside planting anywhere in the world. It could be imitated most profitably. A much neglected tree for avenue planting in California is the Arabian carob. It is evergreen, of great spreading form, and in time grows to magnificent size and stately proportions. It is besides, the producer of the well-known St. John's bread, long, sweet nourishing pods, good for man and beast, of tremendous food value in its native countries of the Orient. When established it will get along with little care, though of course it is much benefited if well watered.

I love to imagine our western country with its highways bordered by large, stately trees, its rapidly increasing farm homes surrounded by fruitful fields and set among trees and flowers. I like to imagine some of our old groves saved, our river banks beautified instead of plundered, our school grounds inviting and full of interest instead of naked, crude and meaningless. I like to dream of our highways well kept, our mild winters, our rainless summer. What a playground for all the rest of our country! Such adornments would pay their costs of construction and maintenance a thousand times over. It would draw to us the best people of the land, it would bring us fame and money; it would bring us culture; it would raise among us an art production and art expression that would stand high before the whole world. It would make us happier not alone through the beauty we ourselves would absorb, but also through the beauty we with pride of our land could share with others. It is not an unimportant question this of rural out-of-door adornment. Nor is it an impractical one. It is not an undertaking that will rob one to give to another. It means a universal blessing; it means as much to the city as to the country. Today with our rapid means of highway travel the highway is traveled more than ever, more of the country is seen than ever, more intimacy is established between distant places and neighbors. It is but a matter of a civilized system and a not-burdensome expenditure of money to make such highway traveling instead of burdensome and tiresome, one of the greatest enjoyments of life. And you who are nurserymen should stand in the front rank of those who urge and work for all this. For you are ethically and commercially interested, and it should not be forgotten that beauty craves more beauty, and you are the forebringers of these millions of plant children, many of whom shall grow into greater and greater beauty and tell future generations that men and women of today had souls.

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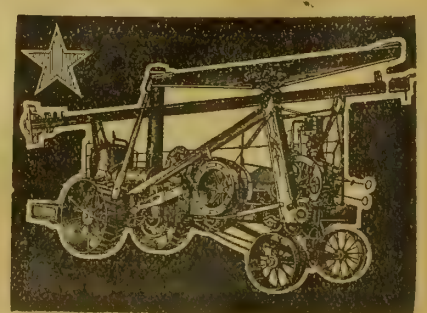

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General Agriculture

PREPARATION OF THE SEED BED.

Kindly forget for the moment all that you ever knew or thought or believed as to the way of preparing a seed bed, and think for a little bit as to how the young plant grows. When the seed is planted, has taken up a sufficient amount of moisture, and has the proper temperature, it puts out a sprout, which pushes out into the earth and becomes a root; and from this branch off rootlets, and from these what are called root hairs, which are simply elongated cells.

Soil Soup.

The plant takes its food always in liquid form. It lives on "soil soup," which it absorbs through these root hairs and sends it onward through rootlet and root into the sprout out of which nature is making a stalk. This sprout comes up sharp pointed in the grasses and grains, and as soon as it reaches the sunlight becomes green in color, finally unfolding its leaves. Its growth is dependent on the sunlight, on contact with the air, and on the amount of nourishment it receives from the root through the rootlets and root hairs. This nourishment it receives, not from the water, but from the soil soup. It can make no use of the water that stands between the soil grains, but only of that which covers each particular soil grain in a very minute film, about half as thick as the film of a soap bubble.

So you see that if this little plant of ours is to thrive, it must be able to get its root hairs close to the soil grain—must be able to push its root forward farther and farther into the soil. This root has a point made up of hard cells which the plant pushes through the soil by putting new cells behind it and driving it just as you would drive a stick into the ground.

Drainage.

Therefore your seed bed must be well drained naturally or artificially, so as to get rid of the water that the plant can not use, and which would strangle it to death by excluding the air. It must be sufficiently loose to enable the plant to push its roots on through the soil. It must be sufficiently compacted, so that the root hairs can come in contact with as many particles or soil grains as possible. It must not have great vacant spaces on account of lumps so hard that neither the roots nor the rootlets can penetrate, which are of no possible use, but do great damage by admitting too much air into the soil, which the rootlets must avoid and find proper soil conditions elsewhere.

While the plant can make no use of standing water, it must have moisture in these films around the soil grains. A few warm days would exhaust the water in the turned furrow, the soil as distinct from the undersoil; and if it does not rain, it must get water from down below, where there is always water in any soil fit to cultivate. Hence in preparing this seed bed you must have close connection between the turned furrow and the undersoil. In fact, you want to have that about as compact as you can make it with moist earth. If you have these conditions, the plant can not help but grow, and its size will be determined by the fertility of the soil, which may be considered as quite distinct from its physical condition. It is the physical condition we are talking about now.

Preparation.

How, then, are you to prepare this seed bed? If you are putting corn on sod, then you should have plowed it last fall for various reasons; to disturb the worms which are found in all old sods; to get the effect of the winter's frost in weakening the grass roots and hastening their decomposition; to save time in the spring, when time is more valuable. But if you have not done so, you want to plow it now, and then when plowed work it down as thoroughly as possible with disc and harrow and sometimes with roller, in order to get the turned furrow in as close connection as possible with the undersoil.

Prevent Clods.

If you do not disk it, a crust will form and cracks will appear, the moisture will escape, and the land, if it has any great amount of clay in it will work up lumpy and you will have trouble with clods. Form a mulch of dry dirt. This will hold the moisture till you are ready, and when you plow it up you will not have any clods, especially if your harrow immediately follows the plow, or if you harrow all you have plowed that forenoon before you unhitch for dinner.

But, you say, I am not going to put it in corn, but in oats, spring wheat or barley. Very well, disk it anyway. Your oats and wheat will each require more moisture than corn, and the oats more than wheat. Therefore, conserve your moisture and get rid of the lumps—which, as above explained, are dead matter and no better than a stone for the season in that field, and do as much damage by letting in air as the stone would. The idea in preparing a seed bed is to conserve moisture, prevent clod formation, get the land so that the plants can make use of every spoonful you plow up, and in such shape that it can borrow from below to meet their requirements.

There are comparatively few things about agriculture that are absolutely known, and few methods that can be prescribed that can be followed implicitly, but this is one of them; namely, keep off your land when it is wet. You had better be testing your seed corn, or applying formalin to seed oats or wheat, than fooling away in the cornfield in wet weather. If you have nothing else to do, it might be a good thing to get out your road drag and work the road, or you might do some of the things your wife has been asking you to do for a month past, and you have said you had not the time.—Exchange.

TOADS IN THE GARDEN.

One of the best friends of the gardener is the toad. The toads destroy myriads of destructive insects; in fact 98 per cent of what toads feed on is made up of bugs, worms, insects, etc. English gardeners pay as high as $25 per hundred for toads, which they colonize in the gardens. Toads live for several years and cling to their feeding grounds. Instead of harming toads, protect them, and if necessary, provide breeding pools for them. In the garden make shallow holes in the ground and cover with stones or boards. The toads will retire into these in daytime and come out at dusk and start in on the bugs and insects.

Fertilize With Air

The nodules on these roots are colonies of bacteria that suck the nitrogen from the air and store it in the plant, which then becomes a valuable fertilizer. The bacteria were placed there by inoculating the seed with

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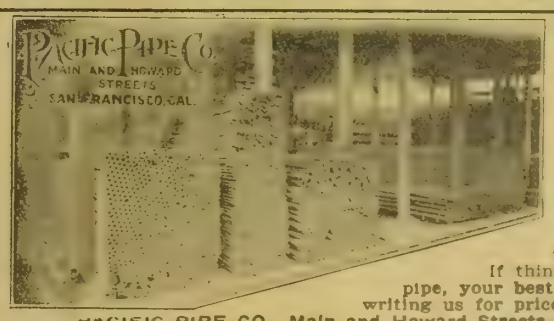

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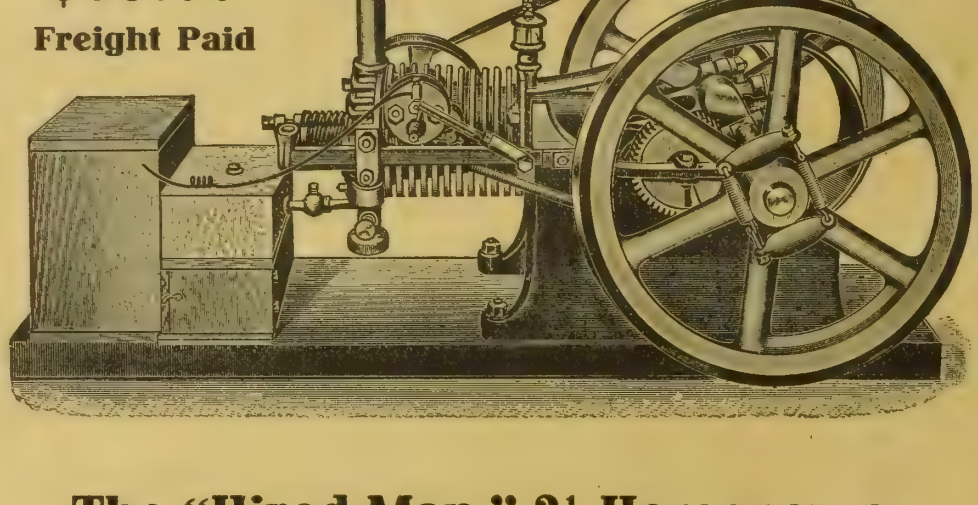

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Cooling—Air cooled (fan).

Cycle—Four.

Lubrication—By means of sight feed oilers.

Pulley—6x4.

Color—Base, green; fly wheels, red.

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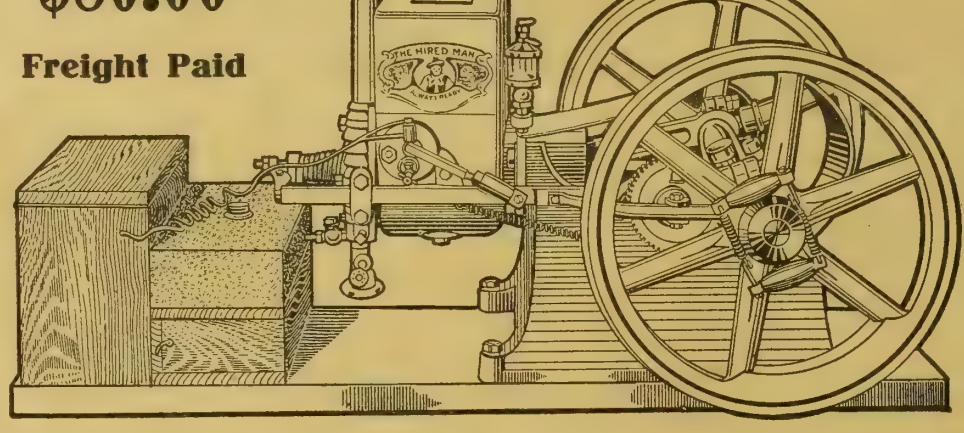

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Speed—450 revolutions per minute.

Ignition—Make and break. All other engines have the cheap jump spark.

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Cylinders—4x5 in. The largest bore of any 2¼ H. P. engine made.

Fly Wheels—Diameter, 18 in.; weight, 50 lbs.

Cycle—Four.

Cooling—Water cooled (hopper).

Pulley—6x4.

Color—Base, green; fly wheels, red.

The "Six Mule Team," 6 Horsepower

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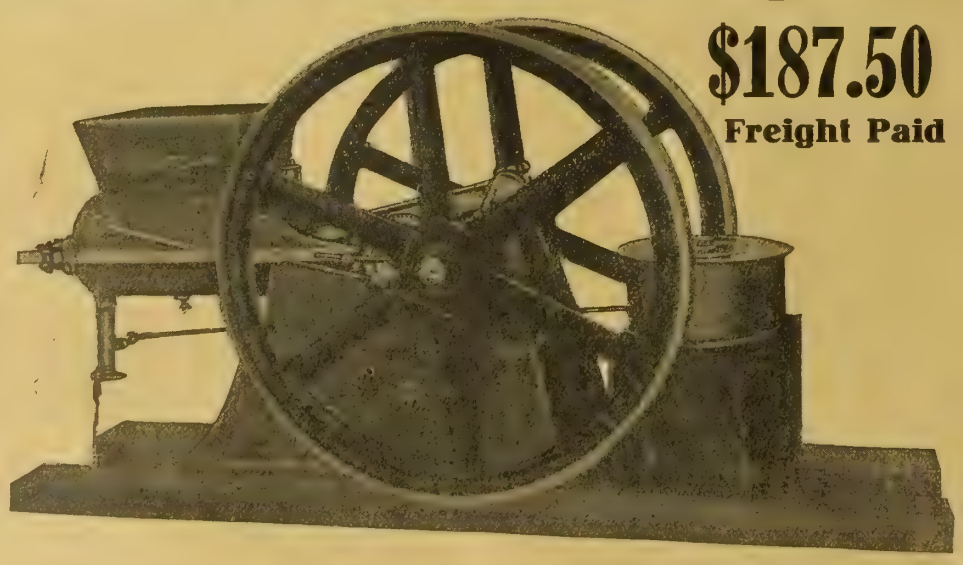

"SIX MULE TEAM" SPECIFICATIONS

Horse Power—Six.

Weight—1200 lbs.

Feed—Combination gravity and suction.

Speed—300 revolutions per minute.

Ignition—Make and break.

Lubrication—Sight feed oilers.

Cylinder—Bore, 6 in.; stroke, 10 in.

Fly Wheels—Diameter, 36 in.; face, 3 in.

Cycle—Four.

Cooling—Water cooled (hopper).

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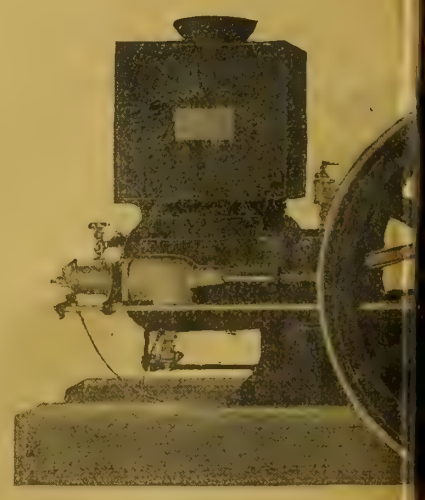

Horse Power, Four; weight, 800 lbs.
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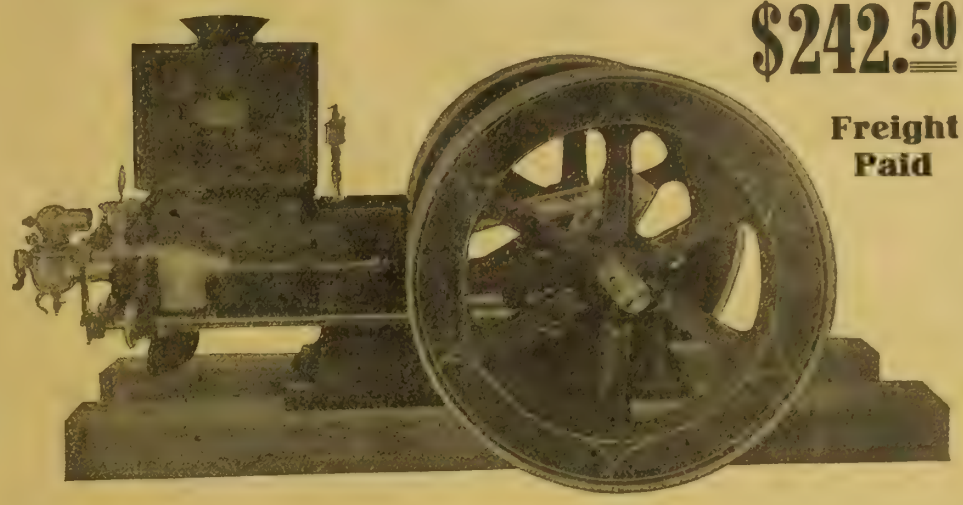

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Weight—1500 lbs.
Feed—Volume.
Speed—250 revolutions per minute.
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Lubrication—Sight feed oilers.
Cylinder—Bore, 6¼ in.; stroke, 11 in.
Fly Wheels—Diameter, 34 in.; face, 4¼ in.
Cycle—Four.
Cooling—Water cooled (hopper).
Color—Base, green; fly wheels, red.

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Weight—1200 lbs.
Feed—Volume. Schebbler carburetor.
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Cylinders — Double opposed. Bore, 5½ in.; stroke, 8 in.
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Cycle—Four.
Cooling—Water cooled (hopper).
Color—Red.

The "Thresherman," 15 Horsepower

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Horse Power—Fifteen.
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Practical poultry people who may have ideas from their experience as to methods of feeding and housing and general care of poultry will convey a favor upon the Cultivator and its circle of readers by sending in concise accounts. Mrs. Basley is always willing to answer queries which with the experience of others should make this a most valuable feature in poultry life on the Coast. Opinions or matters of a personal nature should be omitted, but a concise statement of facts is always valuable.

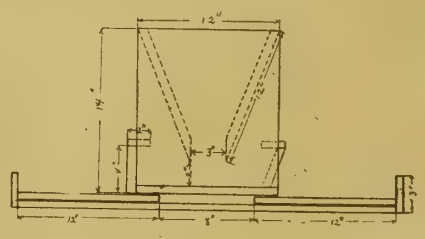
DRY FEED HOPPER WITH PLATFORM.

By J. E. Whistler.

The important points of this hopper are the throat, which must be at least three inches wide to prevent banking of the food, the slant of the sides, which must be as given or more vertical for the same reason, and the platform which catches the small amount thrown out, and which the poultry always prefer to eat rather than take it from the hopper.

If kept full the wind will not affect

DRY FEED HOPPER WITH PLATFORM



it, except when blowing very hard. Where it is marked "8 inches" the board in the platform may be omitted. Make the platform a little longer than the box. The three inch strip across the end of the platform is not shown, in order to simplify the drawing. If the four inch strip is slanted in as shown on one side, the box will be cleaned out somewhat better. No lid is shown. If indoors, a board is enough. If made six feet long it will hold a sack of feed.

POULTRY FEEDING.

Laying hens should be fed regularly and made as comfortable as possible, in other words make them feel at home. Keep everything neat and clean about the plant and yards. Clean windows and plenty of fresh air and sunshine is a necessity for heavy winter egg production, and the general welfare of the fowls.

To show the importance of water in poultry keeping and feeding the percentage is given below: An egg is composed of 65 per cent of water. The hen's body including feathers and bone is composed of 55 per cent of water. So fifty hens will need 4 to 6 pints of water daily.

Feed enough without giving them too much causing a waste and making them lazy. Make them work for every particle of grain food they get. At least once a day a hen should have an empty crop. The correct ration for laying hens is about two-thirds grain and one-third dry mash. The grain foods, fed morning and night should be scattered in deep litter. The dry mash should be fed out of hoppers always before them.

Green food must also be supplied in order to have the hens do well. Mangolds, cabbage, clover and alfalfa are the best green feeds. Twenty-five fowls should receive about four pounds of green food daily.

Increase in food consumption increases weight, and this in turn increases egg production. The old theory and easy way of answering the question, why hens do not lay, answering that they were too fat, is no longer believed by men who have made the keeping of hens a study. A poor hen never lays. A hen first has to have surplus fat to make the yolk, next the white and last the egg shell before she can lay. The yolk is composed mostly of fat, and is the first part of an egg formed, so it necessarily follows that she must have surplus fat, more than she needs to keep up her body heat and condition, before she can lay.

A good dry mash ration for laying hens to be kept in hoppers, is as follows: Mix 10 pounds corn meal, 10 pounds wheat middlings, 5 pounds bran, 3 pounds oilmeal and 5 pounds beef scraps.

A good grain ration is equal parts of corn and wheat.

The following is a good fattening ration: Mix 10 pounds wheat bran, 20 pounds corn meal, and 3 pounds beef scraps, mixed with sour butter milk, fed morning and evening all they will eat up clean, not more.

Egg shells contain 94 per cent carbonate of lime and 7 dozen eggs contain 1 lb. of lime. This shows that it is necessary to supply laying hens with plenty of lime forming material like oyster shells.

But if you do not feed them with the one important factor, with which they can grind their feed and manufacture it into eggs, all your labor, time and feed is wasted. That one all important factor is "grit," good, hard and sharp grit.

The following goes to show the importance of green food, in feeding poultry. In an experiment at the West Virginia Experiment Station it was found that 100 hens 1 year old consumed in 1 year 58 pounds of grain food and all the green food they wanted to eat each and produced in the same time 11,452 eggs; while another flock of 100 hens 1 year old and fed no green food, consumed each 61 pounds of grain food and laid only 9,039 eggs or 2,413 eggs less than the green food fed fowls and had more grain.

Here is what 25 well-fed White Plymouth Rock pullets were fed laying at the same time, which was first week in January, 84 good sized eggs.

Time—One week. Cracked corn, 10 pounds; whole wheat, 10 pounds. This was fed in litter. Corn meal, 4.36 pounds; wheat bran, 2.18 pounds; wheat middlings, 4.36 pounds; oil meal, .68 pounds; beef scraps, 3.63 pounds; green cut bone, 3.2 pounds; mangolds, 32.7 pounds. The dry mash was fed in hoppers always before them. The mangolds were sliced and thrown on the litter. Oyster shells, 1.30 pounds; grit, 3.10 pounds. Oyster shells and grit were also fed in self-feeding hoppers always before them.

During the same time they produced 41.6 pounds of droppings during the night, being scraped off the drop boards each morning.

Eggs at that time sold for 35 cents a dozen.

The droppings are easily worth 20 cents a hundred pounds and at a good many places sell for 40 cents a 100 pounds. Figure out the profit. Please note the time of year, when as a rule, results are not of the very best.—Wis. Agriculturist.

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GAPES HAVE NO TERRORS.

If the chicks develop gapes, use plenty of a very dusty quality of air-slaked lime in the coops and brooders. I have entirely cured this disease by promptly putting into each brooder, right under the hover and where the chicks must sleep on it for a night or two, a thick layer of very dusty lime. Since learning the proper way to treat it, this trouble has no terror for me.

Be sure to provide plenty of air when you try this, and if the air seems exceedingly dusty, don't leave the chicks in it more than an hour or two. If they have to be removed for the remainder of the night, place them back on it for another treatment the next night, and you will neither see nor hear of any gapes from that brood.

The constant shuffling about of so many little feet causes a suffocating dust to arise. They inhale this, and as it causes the gapeworms in the trachea to be sneezed up, the worms fall into the lime and die.

The generous use of lime about the coop and brooders prevents both lice and gapes.

I have laboriously extracted gapeworms from each individual by hand, with many fatalities and some cures, but am satisfied that lime, used in time and as described, is a much simpler and more effective remedy.—Farm and Fireside.

IMPROVISED BROODER.

There were fifteen more chickens than the brooders would accommodate, and there was no mother hen to care for them. We did not wish to get another brooder, so improvised one in this manner:

We placed one box within another slightly larger one, and filled the intervening space with sawdust. A well-fitting door with a large pane of glass was placed over the open side. This box was set in a dry, secluded place and a small scratching park made in front of it.

Within this brooder was placed yet another box only a little larger than was necessary to hold the chickens; this was the hover. A piece of warm flannel was tacked across the upper side so that it hung down against the little bodies, and a small flat jug full of hot water was placed in it every morning and evening. After placing the chickens in this for a few times they learned to go there for themselves. This box being small retained the heat of their bodies, and with the aid of the jug kept them comfortable through some severe early weather.—Successful Farming.

WHY THE CUCKOO BUILDS NO NEST.

A Danish legend about the cuckoo is very curious. It relates that when in the early spring time its voice is first heard in the woods every village girl kisses her hand and asks the question: "Cuckoo, cuckoo, when shall I be married?" And the old people, borne down with age and rheumatism, ask: "Cuckoo, cuckoo, when shall I be released from this world's cares?" The bird in reply continues to sing: "Cuckoo!" And as many times as he sings they count one year to the fulfillment of their desires.

It is said that the poor bird has so many questions put to her that before she realizes it the building season has gone by and she is forced to put her eggs into the hedge sparrow's nest.—London Globe.

The poultry mans' worst enemy is lice, and the greatest torment to the poultry.

WAKE UP!

You are certainly alive to the fact that the cost of living is materially higher at this time than it was a few years ago.

Has your income increased in proportion to your cost of living?

We hope that it has, but we know that in the majority of cases it has not.

Do you know that the groceries you buy from the retail merchant passes through an average of five different hands before they reach you? Each one of these hands or firms has to have its profit.

Our system of modern merchandising eliminates much of this unnecessary expense, and enables us to place the every-day necessities of life in the hands of the consumer at a saving of 20, 25 and in many instances as high as 50 per cent after you have paid the freight.

Suppose your grocery bill is only $20.00 per month or $240.00 per year, and suppose you save only the minimum, 20 per cent, by buying from us—it would amount to $48.00. Can you make money any easier? Will your dollar earn or buy more elsewhere?

We want to know what you are paying your local dealer for the staple articles listed below. Prices vary in different localities, and we would ask you to make a comparison for your own information as well as ours.

Enter in pencil the prices you pay, opposite our prices—cut this slip out and mail to us and we will send you a

Useful Prize

for your trouble. If you send us a ten dollar order with this slip we will give you credit for $1.00. This offer is limited to one order from a family.

	Our Price.	Your Price.
Best Family Flour, 100 lbs	$2.75	
Navy Beans, 25 lbs	1.00	
Full Cream Cheese, lb	.18	
Cluster Raisins, 5 lb. boxes	.39	
Ghirardellis Sweet Chocolate, 1-lb. cakes	.19	
Soda Crackers, 24-lb. boxes, lb	.07½	
Hand Made Chocolates, 5-lb. boxes	1.10	
Hand Made Caramels, 5-lb. boxes	1.00	
Peanut Brittle, 5-lb. boxes	.80	
Grocers' Mixed, 5-lb. boxes	.50	
Dentine Gum, 20 packages	.55	
Maple Flake Corn Flakes, doz	.75	
Violet Oats, dozen	1.25	
Chick Feed, best, 100 lbs	2.60	
Broken Rice for Chicks, lb	.02¼	
Barracuda, 10-lb. kits	.85	
Norwegian Sardines, dozen	.80	
Cottolene, 10-lb. pails	1.38	
Paraffine Wax Candles, doz	.17½	
Alpine Milk, 4 doz. 10c size	3.60	
Small Sweet Pickles, 1 gal. Kits, fancy	1.10	
Chow-Chow, Mason Jar Quarts	.23	
Medium Sour Pickles, 5 gal	.95	
Boiled Cider, quarts	.20	
Rice, Fancy Head, 10-lb sack	.68	
Salt, Fine Dairy, 50-lb sacks	.30	
Syrup, Golden Glory Drips, gal.	.45	
Rock Candy Drips, gal. can	.75	
Clairette Soap, 100 bar box	3.25	
Gold Dust, large size, each	.18	
Cherries, Extras, quart cans, ½ dozen for	1.10	
Peeled Apricots, Extras, quart cans, ½ dozen for	.95	
Plums, Extra Standard, quart cans, ½ dozen for	.70	
White Cherries, for pies or sauce, gallon cans, each	.35	
Peeled Apples, for pies, gallon cans, each	.25	
Canned Corn, Extra Quality, doz	.92½	
Asparagus, large cans, Mammoth White, ½ dozen for	1.30	
Tomatoes, Standard Quarts, doz	.80	
Tomatoes, Standard Gallons, doz	2.50	
Macaroni, 5-lb. box	.32	
Folger's Golden Gate Baking Powder, 5 lbs.	1.23	
Ice Cream Freezer, 2 quart	1.90	
Blue Chambray Shirts, extra quality	.40	

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A Journal of Horticulture and Agriculture.

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The Rand, McNally Co. of Chicago, New York and Los Angeles, has just issued a new pocket map and shippers' guide of California. The map is strictly up-to-date and shows all the railroads, postoffices, lakes, rivers, etc. Its most valuable feature is the index of every town and county, river, and even creek in the state. Even the islands are indexed with marks to show where to find them on the map. The price is 25 cents.

FUNDAMENTALS OF AGRICULTURE.

Fundamentals of Agriculture, edited by James Edward Halligan, chemist in charge, Louisiana State Experiment Station, and published by D. C. Heath & Co., Boston, while primarily intended as a text book in schools giving attention to agriculture, is of great interest to all who would be posted as to the general fundamentals of agricultural science. A great many authors have joined in the production of the book, Prof. Halligan editing and bringing together articles written by specialists along various lines from all sections of the country. The idea of this diverse authorship is to furnish the pupils the best information on each line that can be obtained. At the end of each chapter is a list of bulletins and reference books touching more fully upon the subject of that particular chapter. To make the study of fullest value, it is suggested that field experiments be conducted in conjunction with the reading.

The chapter devoted to the soil is written by Prof. Whitson of the University of Wisconsin and treats of the relation of soil to plant growth, soil fertility, soil physics, and water requirements of crops. Chapter Two on plant life is written by Prof. Bessey, Department of Botany, Michigan State Agricultural College. The department on manures and fertilizing is written by the editor, Prof. Halligan, and consists of five parts. The farm crops chapter is divided into fourteen sections, each section being handled by a different writer touching upon diversification, corn, cotton, rice, wheat, oats, rye, barley, root crops, forage crops, and several others, including weeds. The chapter on trees and the garden is divided into six parts with as many others which have to do with plant diseases, insects, birds, live stock, dairying, feeds and feeding, and miscellaneous. The complete index, together with many illustrations, make it a most valuable addition to the library.

FARM FRIENDS AND FOES.

A text book of agricultural science of interest to all dealing with agriculture is Farm Friends and Farm Foes by Clarence M. Weed, D.Sc., State Normal School, Lowell, Mass. The book is published by D. C. Heath & Co., Boston and Chicago, at 90 cents, which is a remarkably low price for so valuable a book.

The volume is divided into five parts, the first dealing with foes among the weeds, the next with foes among the insects, the third with friends and foes in the fungi, the fourth with friends and foes among the birds, and the last with friends and foes among the mammals. The text of nearly 340 pages is fully illustrated and has a complete index.

The book is planned for use in schools, but is good reading for everyone connected with agriculture. At the end of each chapter are suggestions for observations by pupils. The older ones will find it of value. Where there are youngsters in the family we believe it will be read or even studied with the greatest interest.

EXPORTS OF FARM PRODUCTS.

Exports of farm products will aggregate a billion dollars in the fiscal year which ends with the month of June. The government's fiscal year has for many years ended at the middle of the calendar year, the purpose being to give opportunity to classify and arrange the year's figures in time for consideration by the Congress whose regular date of meeting is the first Monday in December, thus the Bureau of Statistics of the Department of Commerce and Labor presents its detailed yearly report of commerce for the year ending June 30th. Figures for eleven of the twelve months of the fiscal year 1911 are now available, and show exports of cotton 574 million dollars, foodstuffs 354 million dollars, and tobacco 35 million, a total for the eleven months ending with May of 963 million dollars, making it quite apparent that the sum added for the month of June will bring the total exports of farm products during the fiscal year 1911 above the billion dollar line.

CALIFORNIA FRUIT IN ENGLAND.

While in the Pajaro Valley recently we came in contact with Mr. Thos. Eastwood, buyer for the L. Connolly Co., fruit brokers and auctioneers of Liverpool. He was much pleased with the outlook in the Pajaro Valley. His firm has handled some apples from that section and proposes to handle more. The only variety grown there which his market will touch is the Newtown Pippin. Asked as to the Bellflower, he said, "We don't know anything about it and don't want it. The market demand has been for the Pippin." The Washington Navel orange is not a favorite in the English market, principally because of its high price. The smaller European orange has been generally better received; the Jaffa seedling is really the favorite. Valencias as grown in California, are also usually too high-priced. Both Navel and Valencia, however, have a limited demand with the better class of the English trade.

FARMERS NATIONAL CONGRESS.

The official proceedings of the 30th annual session of the Farmers National Congress of the United States which was held at Lincoln, Nebraska, last October, has been issued in a book of almost 200 pages. Addresses were made by Wm. J. Bryan, Dean Burnett of the University of Nebraska, Prof. Woods of the University of Minnesota, and other noted speakers. The secretary of the organization is Geo. M. Whitaker, 1404 Harvard St., Washington, D. C. The vice-president for California is Rev. R. P. Shepherd, Los Angeles.

That live and energetic body, the Los Angeles Chamber of Commerce, has just issued the first number of The Bulletin. It has to do only with matters pertaining to the Chamber and its work and admits no advertising. We note a novel departure in the publicity work of the Chamber; one member is at present touring Europe with a series of views of California and delivering lectures upon them in Esperanto.

The July Sunset Magazine, vacation number, is one of the best of that publication. The leader article is "Sunshine & Seabreeze, Inc.," and is a description written in a light vein of the various beaches surrounding Los Angeles. It is illustrated with three-color half-tones. The remainder of the magazine is given largely to fiction of a nature to be appreciated on a camping trip.

The orange groves of Butte County were visited by a hot wind last week but growers generally believe the fruit is so far advanced no harm will be done. This year's crop will be exceptionally large

A feature of the recent Nurserymens Convention, which has been regular with it for years, and which may well be imitated by the directors of other conventions, is the badge book plan of program. The members of the association are listed in the book containing program, each one having a number given consecutively according to the time of joining the association. Each member attending is given a badge and in addition a large button with his number in such plain figures that it may be read across the room. The badge book having been given to each, the strangers are soon located and acquaintance is easy and natural. In addition to this number, the name of each delegate is plainly printed on his badge.

The University of Missouri has just established a new forestry school, placing Prof. J. A. Ferguson at its head. The university has 50,000 acres in forest lands in the southern part of the state which will be used as an outdoor laboratory for experimentation.

Mr. Adams of the Spreckels Experiment Station, has given considerable attention to the eradication of morning glory. He recently showed us a small plot of a few rods of ground on which a number of hogs were kept for three years and yet there were occasional spears of the pest coming through the soil now that the hogs have been removed. Mr. Adams has found the salt remedy the best next to perfectly clean culture. He has applied salt at the rate of 2½ pounds to the square foot. This destroys the soil for perhaps a couple of years, but the rains and irrigation will ultimately remove it from the soil.

Messrs. J. & A. Churchill of London have in preparation a book on "Who's Who in Science," to be edited by Mr. H. H. Stephenson, who desires information as to scientists whose names may appear in the book. The object of gathering this data is that scientists may be able to communicate with each other the world over. The book will give a condensed summary of the achievements and careers of great men in scientific lines. The publishers may be addressed at 7 Great Marlborough St., London.

Growers of mustard in California may be interested in the recent ruling of the board of food and drug inspection of the department of agriculture that charlock must not be substituted for mustard, or if it is, the label must clearly indicate that fact. The condiment prepared from mustard or mustard flour and charlock with salt, spices, and vinegar is not prepared mustard, but provided a greater quantity of mustard than charlock is used, then it may be called "prepared mustard and charlock."

The American Land and Irrigation Exposition management which is getting ready for its great show in November sends out announcement that $1000 cups are to be given for the finest exhibits of wheat, corn, oats, cotton, potatoes, sugar beets, hops, and alfalfa. For barley a $1500 gold cup is to be presented. For apples a $500 cup will be given for the best 25-pound box of apples. These are all open to competition from any section of the world.

The University of California announces that over 1000 new specimens have been added to the University's zoological museum. During the vacation a corps of professors and student assistants will be busy gathering and mounting others.

Agricultural News Notes of the Pacific Coast

Northern California

Olives promise a full crop at Oroville, Butte County.

Colusa will attempt rice culture, expecting to plant about 75 acres.

Oroville, Butte County, is planning for a citrus fair to be held this fall.

Tule farmers of Dunnigan, Sutter County, are petitioning for a new levee district.

Woodland, Yolo County, reports general fruit crop nearly 50 per cent short of last year.

Harvesters all over the Sacramento Valley are busy with the barley and wheat harvest.

The Western Creamery Company has taken over the creameries at Meridian and Marysville.

Sheridan, Placer County, is putting down test wells hoping to locate a flow of artesian water.

Apricot dryers at Vina, Tehama County, pay 10 cents per orchard box for cutting fruit.

San Franciscans have purchased a 60,000-acre tract in Tehama County and will colonize.

Sacramento Valley apricots have commanded some exceptionally high prices at Montreal.

Over 2,000 acres of the Bidwell ranch in Butte County have been sold and will be subdivided.

Sugar beets are looking exceptionally well at Hamilton City and irrigation has already begun.

The grain harvest of the Sacramento Valley is nearing an end and yield has been satisfactory.

Apple growers of Sebastopol, Sonoma County, closed contracts for dried apples at 8 and 9 cents.

Onion fields at Walnut Grove, Sacramento County, are being attacked by thrips and immense damage is being done.

Fruit growers believe that the court of commerce has granted their appeal for reduction of the $30 icing charge to $7.50.

About 15,000 acres of land will be thrown open to colonization on the Sacramento along the line of the Central California Traction.

The state Country Life Commission has decided that "state regulation of farm land in California" shall be the principal topic of discussion at the next annual.

Mrs. Bidwell has just sold 4800 acres of the Chico ranch to a company which will subdivide. One of the features of the subdivision will be a fine tourist hotel.

A plan is outlined for the improvement of the Sacramento and San Joaquin rivers and tributaries which involves the ultimate expenditure of over thirty-three millions of dollars.

The Secretary of the Interior has approved the application of the Madeline Meadows Irrigation Co. and construction will soon be commenced on a large irrigation scheme in Lassen County.

The Vaca Valley claims that from Northern California she is shipping almost a half of all early fresh deciduous fruits. In one day's shipments from the northern part of the state, of 30 cars Vaca Valley supplied 16.

Central California

Tulare has a hen which adopted a litter of puppies.

Salinas is making preparation for its big exposition week.

Strathmore, Tulare County, will ship fifty cars of oranges this season.

A Stockton man is about to establish an unfermented grape juice factory.

Over 3000 acres of potatoes are planted around Lodi, San Joaquin County.

Some sections of Tulare County have suffered greatly because of grasshoppers.

Fresno fresh fruit shippers are reaching Chicago with a six and a half-day service.

Grain growers near Bakersfield, Kern County, are hoping for the banner yield of grain.

A grape grower at Kerman, Fresno County, has refused $37.50 per ton for his seedless grapes.

A new orange packing house is being constructed at Worth, near Porterville, Tulare County.

Dried fruit producers are holding for good prices and the buyers are slow in making offerings.

A raisin grower of Fresno County is appealing for the establishment of a special raisin growers journal.

Some raisin growers are hoping for a raisin protective league along the line of the citrus organization.

The breaking of a dam in Fresno County flooded much valuable grain land between Mendota and Los Banos.

The levee on the east side of the river near Stratton, Kings County, broke recently and flooded about 700 acres.

The horticultural commissioner of Monterey County, has notified the farmers that they must destroy all Russian thistle.

The directors of the Oakdale irrigation district in Stanislaus County have let a million dollar contract for an irrigation system.

Different sections of the Valley are appealing to the farmers to prepare for exhibits for the coming Panama-Pacific Exposition.

Selma, Fresno County, reports the appearance of a new vine pest in the form of a fungus which curls and causes the leaf to dry and fall off.

The Tulare County Dairyman's Association has organized and elected S. O. Walker of Tulare, president, and Ed Hart of Farmersville, secretary.

The new management of the Corcoran sugar factory in Kings County announces that it is probable that contracts will be made for next year's beets.

Conferences are being held by the board of supervisors of Tulare County and dairymen of that county looking toward an ordinance which it is hoped will suppress tuberculosis.

A proposed irrigation meeting at Firebaugh, Fresno County, was broken up because of summer flood of the San Joaquin River. As one paper expressed it, "The discussion of means of getting more water on land by irrigation was called off by campaign to get several square miles of water off land."

Southern California

Riversiders are making a concerted attack on English sparrows.

Redlands has shipped since November 1st, 1910, nearly 5000 cars of oranges.

Elsinore, Riverside County, is placing a two thousand acre tract on the market in small parcels.

A corporation financed by Riverside capitalists will plant a 200-acre walnut grove on Magnolia avenue.

Potato growers of Monrovia, Los Angeles County, are cleaning up handsome money at $2.75 per cental.

Southern California potato growers have greatly benefited their market by their co-operative marketing organization.

Riverside County is to supply a large number of Matilija poppies for the Panama-California Exposition at San Diego.

Shipments of cantaloupes have materially decreased in the Imperial Valley, but the total is already over the 2000 mark.

Oxnard, Ventura County, grain growers are in the midst of threshing. The yield will not be more than 50 per cent of normal.

Fillmore, Ventura County, recently had a clean-up day when its streets and roadsides of the surrounding country were given a polishing.

The women of El Centro, Imperial County, have combined and are refusing to patronize stores which do not protect their food stuffs from flies.

The receipt in the eastern market of California and Georgia melons glutted the market until rather low prices prevailed over the East for a short time last week.

A model $10,000 farm of only five acres is to be established on the Lankershim Ranch in Los Angeles County. This great ranch is being subdivided and sold off in small parcels.

The Volunteer cotton crop of Imperial Valley is already ripening and it is said picking will begin the last of this month. Some are estimating the first picking will aggregate a half bale to the acre.

Riverside County shows 17,000 acres in oranges; San Bernardino County, 40,000 acres; San Diego, 1400 acres; Los Angeles County, 30,000 acres; Orange County, 12,000 acres; Ventura County, 3000 acres.

Coachella, Riverside County, has just received two cars of Deglet Noors and Rhars dates direct from Algeria. They will be planted on 21 acres of land which will be the largest single date grove in the world outside of Algeria.

Riverside claims the greatest vineyard ever grown and the biggest orange grove in the world within an hour's ride of that city. The vineyard is that of the Italian Vineyard Co. near Cucamonga and the orange grove is that of the West Riverside Estate.

The Riverside Press says that it is receiving both brick bats and bouquets because of its recent editorial regarding the status of the orange growing situation in that oldest orange producing section of the state. The Press says that its only reason was the desire to start an inquiry as to how Riverside's citrus producing conditions may be helped.

The Coast

Wool sales at Ontario, Oregon, have ranged from 13 to 17 cents.

Lewiston, Idaho, is appealing for a station of the weather bureau.

Yuma claims it is having the finest weather in any section of the United States.

The largest wool clip in New Mexico belonging to one man is 400,000 pounds.

The shipment of cattle from Southern Arizona has practically ceased for the season.

One shipment of a thousand head of cattle passed through Yuma last week for Los Angeles.

At several wool sales made at Conrad, Montana, last week 18 cents or better was obtained.

A large acreage of sugar beets is being harvested below the American line in Mexico near Calexico.

It is estimated that the grazing lands of the Philippine Islands will accommodate 9,000,000 head of cattle.

Garfield County, Wash., with slightly over 2000 inhabitants will produce nearly $2,000,000 worth of wheat this year.

Pullman, Washington, had the heaviest rains during June ever experienced.

Grain growers at Walla Walla, Washington, estimate an average yield in that section of 30 bushels to the acre.

Colorado Springs, Colorado, has called for a convention of women farmers of the world, to be held in October.

The products of the Philippine forests aggregate in value about 6,000,000 pesos. The output is constantly increasing.

Irrigators in the Quincy district in Grant County, Washington, are experimenting with irrigating by a sprinkling apparatus.

Southern Arizona ranges are well cleaned up of cattle, and the heavy rains will soon have pastures ready for new feeders.

It is said that many of the old range men of Arizona are going out of business because of squatters coming in and filing upon the land.

The Live Stock Association of the Pacific Northwest is offering $100.00 for the best exhibit car of hogs which is entered at its Fair at Lewiston, Idaho.

The live stock market at Portland, Ore., is exceptionally good, and notwithstanding the big offerings of sheep and lambs, good prices are being obtained.

The handling and storing charges on grain in the warehouse at Lacrosse, Washington, are fixed at 50 cents a ton from time stored to next July 1st.

The demand for dairy cows is so great in both Oregon and Washington that Wisconsin, Illinois, and other eastern states are being drawn upon at an average price of $150.

The government forest school of the College of Agriculture, University of the Philippines, entered upon its second year last month. Graduates are assured a position in the Philippine forest service.

Questions and Answers

THE EDITOR AND STAFF

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Tanning Leather.

Please give method of tanning hides into harness and saddle leather.—Subscriber, Canadian, Texas.

For a 12 lb. calf skin take terra-japonica, 3 lbs; common salt, 2 lbs.; alum 1 lb.; put these into a copper kettle with sufficient water to dissolve the whole by boiling. The skin or skins will first be limed, haired and treated, as given in Cultivator of June 11. Then it will be put into a vessel with sufficient water to cover it, at which time you will put in one pint of the composition, stirring it well, adding the same amount each night and morning for three days, when you will add the whole, handling two or three times daily all the time tanning. You can continue to use the tanning liquid by adding half the quantity each time of new liquor and by keeping these proportions for any amount, and if you desire to give the leather the appearance of bark color you will put in one pound of Sicily sumac.

Leaf Fungus.

I send leaves of loganberries and blackberries affected with a rust or fungus which prevents bearing. Had a light crop last year but leaves this year continue to wither and dry up. What is it and how can I handle it?—Subscriber, Portersville.

Mr. C. O. Smith of the Southern California Pathological Laboratory answers: "The enclosed leaves of loganberry show a well-known leaf spot, Septoria Rubi. It is not a common practice to spray for this trouble, for, although the disease is rather common it does not seem to injure the growth of the vines to any marked extent. The fungus is to be found on wild and cultivated blackberries, dewberries and loganberries. If the trouble is likely to be serious, it probably could be controlled by spraying the vines early in the season when new growth is taking place, and about every two or three weeks afterwards until the fruit has reached almost full size. There is very little literature on this subject, but I would suggest Bordeaux mixture: 21 lbs. copper sulphate, 4 lbs. lime and 50 gallons of water. It is too late this season to do effective spraying."

Grafting Walnuts.

What is the right time of year to graft walnuts? What is the best variety from which to take the buds or scions? I would like to get a variety not susceptible to blight. Have planted California Blacks where I wish the rows of trees to come, and will graft later. They were planted in the spring of 1910. The following fall they were nearly an inch in diameter and I inserted buds, but did not succeed in getting them to grow. An effort at grafting this spring resulted similarly. What kind of wax is preferable?—Subscriber, Suisun.

The time for grafting is immediately before the starting of young growth in the spring or at the time of starting, and should be with scions cut some time before which are practically dormant. They can be preserved in moist sand, or if careful, in wet sacks. Budding has been less favored than grafting in the handling of walnuts. Instead of attempting to change the trees over at this age we would allow them to grow a few years until some size is attained. By that time a blight resistant or more largely immune variety may be developed. At this time there are many claims as to which is the best variety. The particular kind of wax is not a material factor save that in intensely hot sections the greater proportion of rosin is used to prevent running. Of the many formulas here is one which may be varied to suit the conditions: Rosin two pounds, beeswax two pounds, tallow one-fourth pound, a little linseed oil to suit. See Mr. Neff's article on walnut grafting in issue of March 26, '08, also Mr. Roeding's article in issue of Feb. 16 this year.

Indigestion.

Can you tell me what is the trouble with my little chicks? They droop around like one that is lousy, wings hanging down, and their crops seem full of water or air, some eat while others will not. I have three or four die a day. They are incubator chicks and brooded in fireless brooders.—X. Y. Z.

It is indigestion. The usual causes of indigestion in small chicks is first lice or mites, secondly wrong feeding, thirdly insufficient or dirty water, fourthly lack of grit, and chilling or overheating from crowding at night. Worms in the intestines and lack of green food will also cause it. You do not mention their age which might help one to diagnose the case, also you do not say if they have diarrhoea, so it is rather difficult to prescribe for them.

Try first to discover where the trouble comes in, and remedy it. Cut open the next that dies and look for worms. If they have worms give each droopy chick five drops of turpentine in half a teaspoonful of castor oil. Give green food and also give easily digested food such as bread and milk, or rice boiled in milk. If they appear weak give them raw egg well beaten with the same amount of pure olive oil. Give about half a teaspoonful of this every two hours till they are stronger. If you will write me how you feed, how the brooder is ventilated, the age of the chicks, etc., I can tell you better what to do than only guessing where the trouble comes in.

Russian Thistle.

I enclose piece of a weed which is new to my land this year. What is it?—W. A. D., San Marcos.

This is the Russian thistle in an early stage. It is found in many sections of California and does not seem to be the pest that it is in the Middle West, especially in the Dakotas.

Liver Trouble.

I have a rooster a year old which about two months ago began acting as if there was something in his throat. He could not eat, his comb got black, droppings were watery and greenish yellow. I gave him castor oil and in a week or so he got almost all right but he remained stiff and is still that way. What was the cause and what is the remedy? Can you tell me if chicks hatched out in September will do well and if they could be sold as broilers at Christmas time?—Mrs. S., Watsonville.

Your cockerel may have had something like foxtail in his throat. The blackness of the comb is almost always a symptom of liver trouble from too little green food and too much starchy food taken without enough exercise. The exercise is to keep the liver vigorous. With liver out of order the next thing that develops is rheumatism and that causes the stiffness in the legs. You might give him a little Epsom salts in the drinking water for a week, followed by bicarbonate of soda for another week. Give half a teaspoonful in a pint of water.

You can hatch in September, only be careful not to overheat either in the incubator that month or in the brooder when hatched. Give plenty of green food, also feed the parent birds for vigor, and do not feel disappointed if you have a good many infertile eggs at that season. It is a very good time to hatch for Christmas broilers. I always liked the early hatches in September and October and by imitating nature in the feeding I had very good luck.—Mrs. A. B.

Wild Sweet Pea.

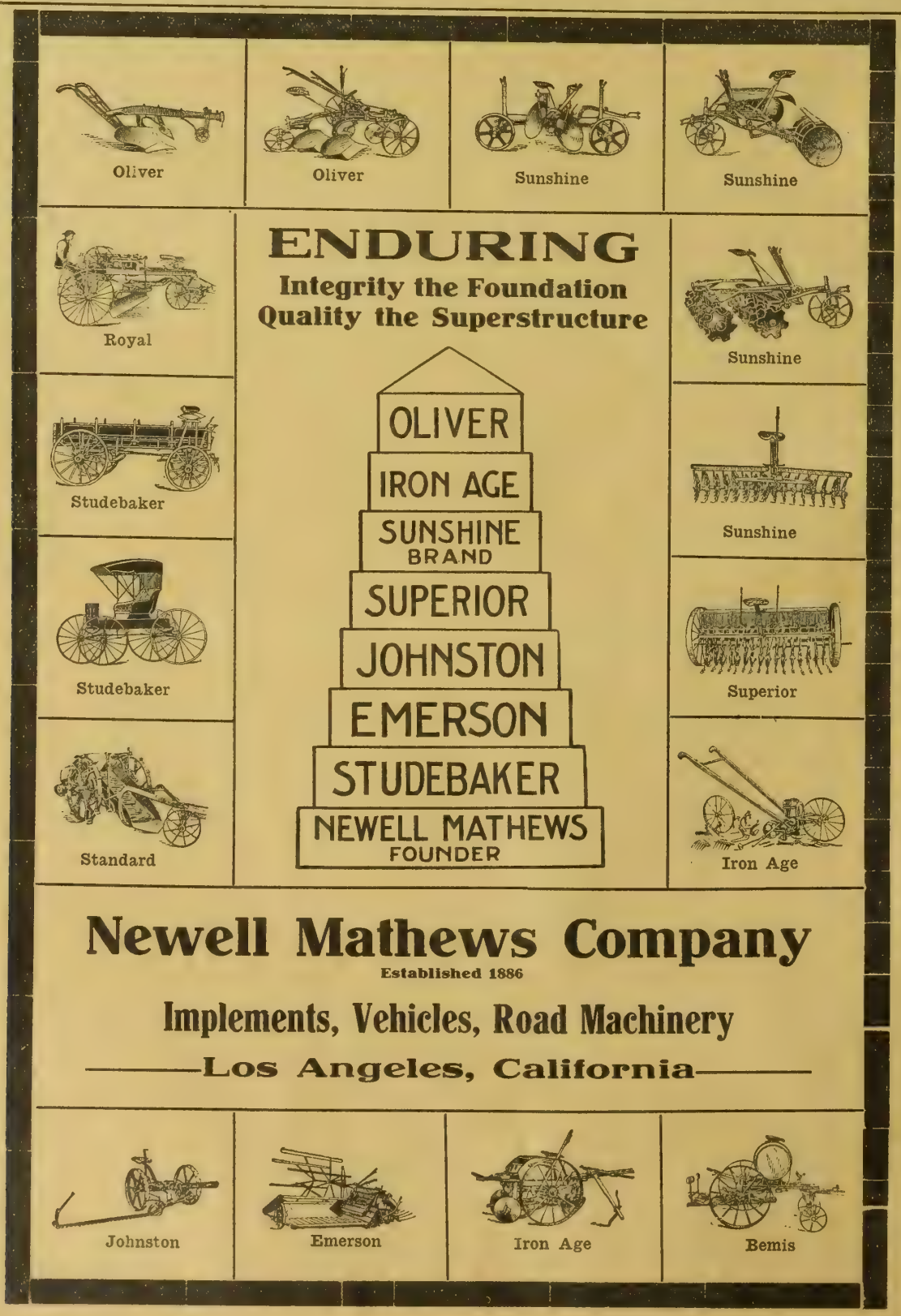
I enclose piece of wild sweet pea. Have had six horses die which were running on pasture where it grows. A veterinarian told me that they died from eating alfilaria, but it was my idea that this wild pea was the cause. —Subscriber.

This was submitted to one of the best botanists in California and he says that it is the Lathyrus lactiflorus, a common innocent plant.

Palo Verde Seed.

Is the seed of the palo verde tree which grows in abundance on the desert beneficial or harmful to poultry, hogs, or other stock?—P. J. H., Brawley.

We are unable to find out definitely as to the effect of this seed. Have



any of our subscribers had experience? If so, will they inform us?

Ants in the House.

I am troubled with ants in our house. They have been here for the past year and are increasing. From description think they are the Argentine. Also where can I get in touch with Experiment Station that will give me help?—Subscriber, Ioamosa.

We do not believe there is any better remedy in the house than buhach. If it is secured fresh it will drive almost any insect from the shelves. Scatter liberally wherever the pests are to be found. We have never known of a case where it failed. There are ant pastes and other remedies advertised, many of which are excellent. We may add that buhach is a California product, said to be the same as Dalmatian insect powder, but we have found it far superior. If the line the ants form in traveling to the house is traced back and the hole discovered, the whole bunch may be destroyed by use of sufficient boiling water, with carbon bisulphide or cyanide of potassium dissolved and poured over the ground and covered with a damp cloth, or various other effective remedies.—Exp. Sta., Berkeley.

Measuring Hay in Stack.

Please give most approved way of measuring hay in the stack.—Subscriber, Bishop, Inyo County.

No absolute method can be given, because of variation in different kinds of hay, and length of time since stacking. Of course, old hay which has settled for several months is more compact than new hay which has just been thrown up. Alfalfa is much heavier than barley. The weight also varies according to whether it is fine and short or has strawy stalks. Approximately we may say that a ton of hay occupies about 400 cubic feet. Therefore, to secure tonnage of a stack, multiply together the length, breadth and height to the eaves or angle at which stack begins to slope. This will give the cubic contents of the lower part of the stack. Then, to find the cubic contents of upper part, multiply length by breadth by one-half vertical distance from level of eaves to crest (if angle is reasonably regular). Add contents of upper and lower parts, of course keeping all dimensions in cubic feet, and divide the sum by number of cubic feet allowed to a ton, or, as we have said, approximately 400 feet.

Walnut Information.

I am looking for information regarding raising and culture of walnuts, also the latest varieties.—J. R. W., Fresno.

California pioneers, which we all are who are working in fruit culture in this state, must put up with many inconveniences and study out many problems which the next generation will have largely solved for them. Along the line of walnut culture there are yet many problems to be solved. So far as we know, there is no treatise on the subject. We doubt not the Cultivator has contained more than any other one publication, but these are so scattered through months, and even years, that it is hard to gather them together. There is a field for several books in fruit growing lines in California. Wickson's "California Fruits" touches upon the general topics of fruit culture, but only a very few pages are given to walnuts.

Making Soil Mellow.

Advise me as to handling adobe soil to make it mellow. It runs together badly and is very hard to work. Have applied a quantity of manure. It seems to be of no use, however. Will lime help?—C. M., Arroyo Grande.

The application of manure was a step in the right direction. Manure for this purpose, however, should be coarse and strawy and worked into the soil as thoroughly as possible. Lime is an added advantage and the application of 500 pounds or even a ton to the acre may prove advantageous. Be sure the lime is thoroughly air-slaked, for the fresh burned lime would be too caustic for the soil. For valuable garden spots we have known of good results to come from application of sand, which worked into the soil in time helps to make it more mellow.

Money Making Little Liners

In this department we will insert your advertisement under a classified head for 1½ cents per word per issue. No ad accepted for less than 25 cents. Our classified columns are the clearing house for our many thousand readers.

LIVE STOCK

Stallions for Sale—Acclimated animals. All harness broken, sound and gentle. Leader 40637. Dapple gray, 8 yrs. old. Ladoga Leon, 66619, 2 years old. Dark gray. Dam weighs a ton. Liberty 74310. Black yearling. These three are registered in the Percheron Society of America. Atwood, bay carriage stallion, 2 yrs. old. Solid color. Sired by Athadon, 1st dam by Junio, son of Electioneer. McKinney Don, 2 yrs. old. Solid bay with black points. Sire Stanford McKinney. 1st dam Belladonna, standard by trotting record. 2nd dam by Athaneer. Both well broken to buggy. Minnewawa Stock Farm, Fresno, Cal.

Grapewild Farm Herd of thoroughbred Berkshires. State fair prize winners. Boars and sows of all ages, unrelated. Address A. B. Humphrey, Mayhews, Sacramento Co., Cal.

Thoroughbred Belgians, White Angoras, New Zealand Reds and Silver Grey Flemish Giant Rabbits. List free. Caldwell Bros., Los Angeles, Cal.

Dairy Floating Thermometers and all kinds of supplies for the dairy at Guy F. Kelsey Co., 108 E. 8th St., Los Angeles. Phone Sunset Main 7496.

For Sale—Shorthorn bulls and Berkshire hogs. Bred for size and quality. H. L. Murphy, Perkins, Cal.

Three Holstein Friesian Bulls, splendid young animals for sale, well marked and subject to registry. Write at once to Geo. G. Roeding, Fresno, Cal.

WANTED

Local Representative Wanted. Splendid income assured right man to act as our representative after learning our business thoroughly by mail. Former experience unnecessary. All we require is honesty, ability, ambition and willingness to learn a lucrative business. No soliciting or traveling. This is an exceptional opportunity for a man in your section to get into a big paying business without capital and become independent for life. Write at once for full particulars. Address E. R. Marden, Pres. The National Co-Operative Real Estate Company, L 448, Marden Bldg., Washington, D. C.

Manager of Orange Property—Have had wide experience in handling orchards and alfalfa. Wish position as manager or in directing labor. Specially wide experience with the citrus. Address Y, Cultivator Office.

DAIRY SUPPLIES

Have You a Cow?—Have you a creamery? Have you a cheese factory? Write us. Everything used in either a dairy, creamery, cheese factory, or for handling milk, cream, butter, or cheese. We are in a position to quote you prices on entire creamery or cheese-making outfits. We make a specialty of only the latest and best sanitary machinery and supplies. Send us a list of what you want and we will quote prices which we feel certain will interest you. O. J. Weber Co., 225-227 East Sixth St., Los Angeles, Cal.

GUY F. KELSEY CO.
Full line of dairy supplies. Come in, phone or write. Generous sample of Prosperity Washing Powder given on request. 106 East Eighth St., Los Angeles, Cal. Phone Main 7496.

Agricultural Implements—Vehicles

For Sale—Agricultural implements, vehicles. Splendid values, lowest prices, liberal credit. See us without fail before buying. Catalogs mailed out of town customers. Write us describing what you wish to buy. When in the city a personal call will show the largest stock and assortment in the Southwest. Arnott & Company. Established 1892. 112-118 South Los Angeles Street, Los Angeles.

TREES

For First-Class Valencia and Navel Orange trees and Eureka lemons, see A. G. Snow, Oxnard, Cal.

Fine line of Navels—Valencias and Eureka lemons for delivery spring of 1911. Contract now and get the first choice. The King Citrus Nurseries, Whittier, Cal.

For Sale—500 Choice Valencia Orange Trees and some Washington Navels. G. W. Thurston, R. F. D. 6, Box 82, Los Angeles, Cal.

RARE PLANTS

Bougainvillea Vines, large plants, 40c each; Broom, Spanish, large, 50c each; Cannas, choicest mixed, $1 per dozen; Coreopis from pots, 75c dozen; Daisies, Shasta, strong plants, $1 dozen; Gaillardias, medium sized, 50c dozen; Geraniums, choice mixed, $1 dozen; Geraniums, Ivy, choicest red, $1.50 dozen; Hydrangeas, small $1.00 dozen, large 25c to 50c each; Impatiens Sultana, choicest mixed, 75c dozen; Lobelia 50c dozen; Salvia Splendens, 75c dozen; Trumpet vines, 8-inch pots, 75c and $1 each; Loquat seedlings, 2 to 3 ft., 50c each. The Palmas Greenhouse, Flint & Flint, Props., Palo Alto, Cal. Box 453.

Ahuacate (Alligator Pears, Avocados), Persea Gratissima. New crop is now coming from Mexico. None better for stock. $4.50 per 100; $40 per 1000. Montarioso Nursery, Box 1500, Santa Barbara, Cal.

Wild Plant Improvement Gardens, Santa Ana, California. Newton B. Pierce, proprietor. Rare choice ornamentals and new fruits from all lands.

Tropical and Semi-Tropical Fruits and Ornamentals. Headquarters in California. Montarioso Nursery, Santa Barbara, Cal. Descriptive, illustrated price list free.

Ferns for growing on Adiantum pedatum 5c, Pteris serrulata 3c, Aspidium tsusimense 3½c and 5c. Terms cash. Ballou's Nursery, Pasadena, Cal.

SEEDS AND PLANTS

Cabbage Plants—Millions of them. All standard varieties. Now ready. 100, 25c; 500, $1; 1000, $1.50; 5000, $5; delivered anywhere. Chocolate Bayou Nurseries, Alvin, Texas.

FARM LANDS WANTED.

Farms Wanted—We have direct buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property Free. American Investment Association, 12 Palace Bldg., Minneapolis, Minn.

FARM LANDS FOR SALE.

101 Acres—$5000. Fine river silt soil, water right, fenced and improved; quarter mile of station and large town; pumping plant; 16 head of mules and horses, 20 head of cattle, 2 plows, 1 scraper, chicken corral and chickens; 2 acres in onions and carrots, 4 acres in bananas. One of the most desirable places in the beautiful Culican Valley, State of Sinaloa, Mexico, where two and three profitable crops are raised. Just the place for settler wanting to go to work at once. For terms and further particulars, write Ben W. McCloskey & Co., 700 Union Trust Bldg., Los Angeles, Cal.

Money Making Lands in Famous Pajaro Valley—Soils that will grow anything. One 1,000-acre tract suitable for subdivision; fine for fruit and poultry farms. Price $40 an acre. 70-acre eucalyptus proposition, 60 acres in 2 year old trees now 7 to 10 feet high; 10 acres in orchard. Apples worth $1,000. A pick-up at $8,500. For full particulars and list of 50 orchard bargains write to Farm and Forest Realty Co., Watsonville, Cal.

For Sale—A 20-acre farm for $20 cash and $20 a month; possession now; $90 to $125 per acre; your crops pay for the land. Rich, level land for alfalfa, oranges, almonds, grapes, cows, chickens; abundance of ditch water, for irrigation, for $1 an acre a year. Where else can you get this? In Oakdale Colony, near good town and railroad station. Climate delightful. T. Wiesendanger, 207 S. Broadway, Los Angeles, Cal.

For Sale—10 acre orange grove in heart of promising little city close to Los Angeles. Trees 12 years old and beauties, burdened with a firmly set crop which will net $5000 this year. Best of soil and plenty water, absolutely frostless. A bargain if sold at once. L. F. Anderson, 800 W. 47th St., Los Angeles.

FOR SALE. $20 PER ACRE.
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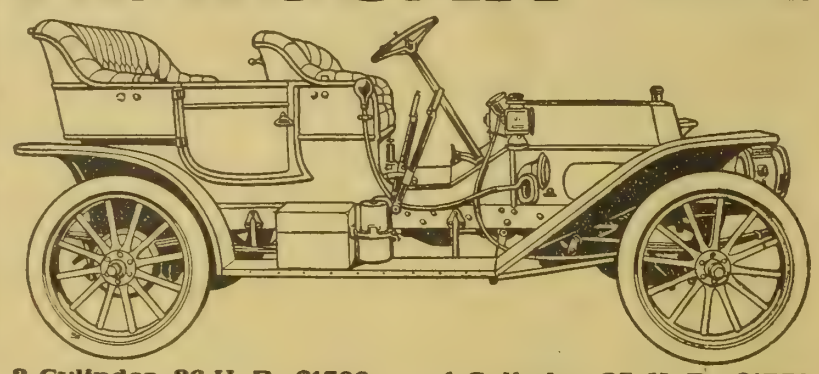

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'Mid wavelets delicate as silk.
The beverage of creamy snow,
'Tis said, will keep grim age at bay.
But where, I'd somehow like to know,
Where is the churn of grandma's day?

That churn was not of fancy art;
The dame of style would scorn it now,
And working it would quickly start
A crystal beading to the brow.
But when, with golden specks replete,
Up-splashed the cool, delicious spray,
What modern drink could be as sweet?
Where is the churn of grandma's day?

Within those frothing waves were blent
A thousand flavors, fresh and fine—
The elder-flower's floating scent,
The clover meadow's airy wine,
The perfume of a summer night,
The richness of a sunny May,
The tang of herbage crisp and light.
Where is the churn of grandma's day?

Madames who think you've found at last
A fountain of undying youth,
Where is the vigor of the past
That kept the spirit young, in sooth—
The simple life and wholesome fare
That held the worry lines at bay,
The exercise and pure, fresh air?
Where is the churn of grandma's day?

—Harriet Whitney Durbin, in Woman's Home Companion.

THE HORSERADISH PATCH.

"Oh, dear! Nothing but horseradish coming up!" exclaimed little Amy Willard as she walked across the half-acre garden patch behind the house. Then she quickly added: "I wouldn't care if every leaf was a crisp greenback, so we could get what Rachel needs, and keep her at school."

Suddenly a boy's voice called from the corner of the house:

"Say, Amy, I want you to help me dig some horseradish roots."

"Horseradish roots!" repeated his sister, half-contemptuously. "What do you want it for? We're all tired of it."

"I know we are. But it isn't Mother wants it. It's Mrs. Hamlen."

Jack and Amy were not long in digging up a generous bunch of horseradish roots, which were taken to the well and carefully washed and scraped. Then, putting them into a small basket and covering them neatly, they started toward Mrs. Hamlen's.

After praising the clean appearance of the vegetable, Mrs. Hamlen said:

"Here are twenty-five cents, and thank you both very much for your trouble."

"It—it don't seem right to take money for horseradish," stammered Amy.

"Not right to take pay for this nice horseradish " laughed Mrs. Hamlen. "Why, certainly it is. If some folks had your large patch of horseradish they would make a great deal of money out of it. I knew an old man, back in Illinois, who nearly supported himself by preparing horseradish for market every spring."

As they were hurrying home, Jack regarded his sister's thoughtful countenance for a few moments in silence; then he asked:

"Say, Amy, what you thinkin' 'bout so stiddy?"

"About what Mrs. Hamlen said of that old man who sold horseradish," she answered.

"What 'bout him?"

"Oh, nothing! Only I wondered if we couldn't fix up a lot of horseradish ready to use on the table, take it to the stores and get money for it. If we only could make enough to keep Rachel at school."

"I wish we could," Jack agreed heartily.

"Father," said Amy that evening as Farmer Willard smoked his after supper pipe, "won't you please let Jack and me have all the horseradish we want?"

"Great Scott!" he ejaculated, patting the wavy hair. "Don't your mother let you have all you want at the table?"

"It isn't that, Father. We don't want it to eat—for ourselves."

"What, then, do you want it for?"

"That's our secret. But may we have some?"

"To be sure. Take all you want of the stuff. There's enough of it to make blisters for every hospital in the land," he laughed.

"And, Father," she went on, coaxingly, "you'll take Jack and me to town with you when you go the last of this week?"

"Yes, you may go, if you're up early enough."

"We'll be up early," she cried, dancing off to whisper to Jack in the corner.

The way those two children extracted horseradish roots and cleaned and grated them for the next two days would have created a great deal of wonder in the mind of anyone not in the secret. The mother had to be let into the plan, and her suggestions and assistance were of much benefit to them.

The grated horseradish was put into empty glass fruit jars, of quart and pint measures, then covered with good, home-made vinegar. When they decided that they had prepared enough to experiment with, they had two quart and three pint jars full.

Bright and early Saturday morning, Amy was awakened by the redbird trilling a spring jubilee in the plum tree near her window.

"It's for Rachel," she repeated over and over as she dressed herself. "If we only can sell it, it will help a little, and maybe something else will turn up so she won't have to leave school."

When they reached town, Farmer Willard let them out on one of the main sidewalks, and promised to hunt them up as soon as he disposed of his grain at the mill and received flour and meal in exchange.

A little later, Mr. Thomas Davis, standing behind his counter, was surprised to see two country children deposit the basket on the counter before him.

"What have you here?" he asked.

"Horseradish, sir," answered Jack.

"Horseradish! Well, so it is," said Mr. Davis, taking up one of the quart jars and examining it. "All ready for the table, I see."

"We made it—Mother and us," said Jack. "Don't you want to buy it?"

"I have never handled any, except what is put up in bottles. But I suppose I might find sale for it," said the groceryman.

"This ought to be lots stronger and

better than that in the bottles," he said, upscrewing the lid from a jar. "Whew!" he whistled a moment later, the tears streaming down from his eyes. "I should say so."

Amy and Jack, remembering the abundance of their own tears drawn forth over the preparation of the horseradish, only smiled their sympathy.

"Well," said Mr. Davis, putting the lid back on the jar, "I guess I'll take it and risk getting my money out of it, if you will take groceries in exchange."

"Oh, please, sir!" cried Amy, her cheecks very red, "we can't do that, because——"

"No," Jack spoke up, 'we want money for Rachel."

'Rachel?" said Mr. Davis. "Who's that?"

"Our sister. She's at the 'cad'my, and we want to get money to buy her new books and new clothes, so she can keep on."

"I am sorry," said Mr. Davis, "but I can't pay you cash."

Then, noticing the disappointment depicted on the faces of the young venders, he added: "But I'll tell you what I'll do for you. If you wish you may leave your jars here, and I'll do my best to sell your horseradish, and give you the amount it brings."

Farmer Willard just then happened to come in, and the groceryman explained to him the proposition made to Amy and Jack, the result of which was that the jars were left with Mr. Davis to dispose of to the best advantage possible, and the farmer promised to return in a week and receive the groceryman's report.

A whole week to wait! Time had never seemed to drag so slowly to Amy and Jack before. But at last Saturday came, and Farmer Willard went to town again.

Amy and Jack did not accompany him, but they were waiting for him on his return. As he drove into the yard they caught sight of their basket with the jars carefully repacked in it, on the spring seat by the farmer's side. They had been hoping so strongly that Mr. Davis might find sale for their horseradish, but he had sent it back. Two very gloomy countenances greeted the farmer's smile.

"What are you two looking so glum about?" he asked, jumping out of the wagon. "Them jars have come home empty."

"Empty!" cried Jack.

"Yes," laughed Farmer Willard.

"Oh!" cried Amy, her bright look returning. "Did he really sell our horseradish?"

"Well, he did," returned her father in a happy tone. "Look here!" and he poured a whole handful of silver money into the surprised and delighted Amy's lap. "Sold it all, and wants more. Mr. Davis says he can dispose of all the horseradish we can take him by shipping it to some factory where they put up such stuff for the markets."

"Hurrah for the horseradish patch!" cried Jack, dancing gleefully around his sister, who could hardly realize their good fortune.

"Rachel can keep on at school; I'm so glad!" And happy tears shone in the blue eyes of the little girl.

Mr. and Mrs. Willard and the children all went to work eagerly in preparing the horseradish according to Mr. Davis' orders, and their receipts were more than sufficient for all Rachel's needs.

The Willard horseradish patch has increased in size, and it is a wonder to all who see it. The business started by Amy and Jack has developed into a considerable industry with them, and has enabled them to add many comforts to their humble home.

Rachel Willard is now a successful teacher in the district schools near her home, and is using the greater part of her wages to help pay off the mortgage and to educate her brother and sister.—Independent.

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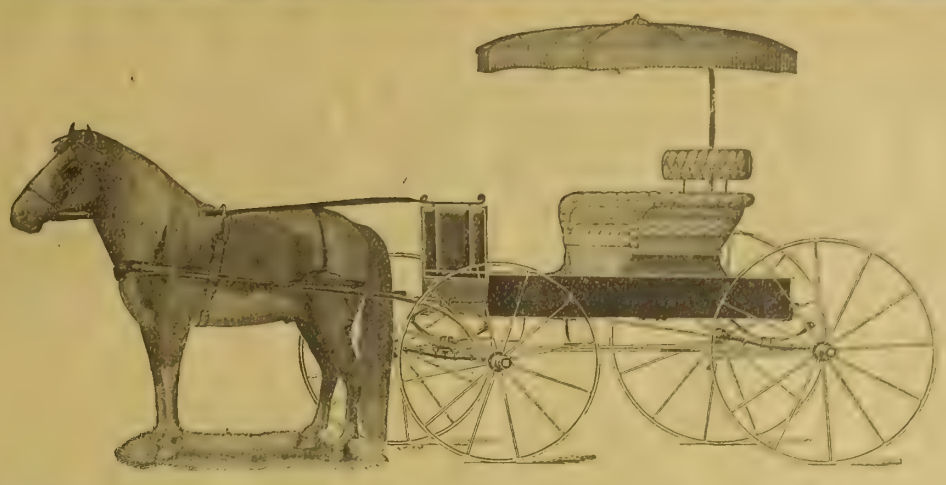

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Los Angeles Market

LOS ANGELES, JULY 12, 1911.

Butter.

Fancy grades of butter are in keen demand, Eastern going slow, and general tone of the market good.

Prices to trade 2½c in advance of the following Produce Exchange quotations:

Extras	22½
Firsts	21½
Ladles	18
Country	15
Eastern	21

Cheese.

Local Anchor	16
Oregon Daisy	16@16½
Northern Fresh	15
Domestic Swiss	18
Imported Swiss	30@32

Eggs and Poultry.

Demand for eggs keeps market well cleaned up and firm, but with a half cent decline noted during the week on local ranch, while Northern and Imperial show a 2-cent advance.

Paying prices f. o. b. Los Angeles are:

Local ranch, candled	28
Case count buying price	24
Northern and Imperial	22@26
Eastern	21

Dealers pay for live poultry f. o. b.:

Hens, per lb	12@15
Roosters	8
Broilers	15
Fryers	18@20
Roasters	20
Turkeys	22@23
Ducks	14@15
Geese	15
Guinea hens, doz	4.00
Squabs, doz	1.75

Live Stock.

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs	7¼
Prime steers	6
Heifers	6
Calves, per lb	6½
Sheep, ewes, per head, shorn	4.75
Lambs, per head	3.75@4.25
Wethers, shorn	5.00@5.50

Potatoes.

Wholesale prices are:

Sweets, yellow, lb	15
Sweets, red	3.00
New potatoes, lugs	1.10@1.20

Onions.

Wholesale quotations:

Silverskins, ctl.	2.75
Bermudas, crate	1.75
Yellow Danvers	2.25
Garlic	8@10

Vegetables.

Wholesale quotations:

Artichokes, northern, doz	75@90
Asparagus, lb	6@8
Beets, doz. bunches	20@25
Bell peppers, lb	30
Beans, wax	5@6
Green chilis	12@13
Cucumbers, lugs	1.00@1.50
Cabbage, sack	1.00@1.25
Celery, new, doz	1.35@1.50
Carrots, doz	20@25
Corn, lug	50@75
Horseradish, lb	12½
Onions, green, doz bunches	10@15
Kolrabi, doz bunches	40
Leeks, doz	35@40
Lettuce, crate	75@95
Mushrooms, basket	3.50@4.00
Oyster plant, doz	35@40
Okra	4@5
Peas, lb.	3@5
Parsley, doz bunches	20@25
Parsnips, doz bunches	20@25
Radishes, doz bunches	15@20
Rhubarb	90@1.00
Spinach, doz	15@20
Squash, summer	35@40
Spearmint, doz	25@30
Tomatoes, Mexican, crate	1.25@1.75
Turnips, doz	30@35
Watercress, doz	25@30

Citrus Fruits.

Valencias	2.25@2.75
Grapefruit	1.75@3.25
Lemons	1.75@5.00
Limes, hundred	1.25

Fresh Fruits.

Wholesale prices on the market are:

Apricots, crate	1.25@1.50
Bananas	4@4½
Pearmains	2.75
Cantaloupes, ponies	1.25@1.50
Cantaloupes, standard	1.75@2.00
Cherries, black, bulk, lb	10@12
Cherries, white, bulk, lb	8@9
Figs, box	1.25
Grapes, Sweetwaters, crate	1.10@1.35
Grapes, Thompson Seedless, lug	2.00
Grapes, Black, crate	1.50
Grapes, Malagas, lug	2.50
Loquats, lb	4@6
Loganberries	7@8
Peaches, lug	1.25@1.50
Pineapples	7@8
Plums, Clymans, lug	2.00
Pears, box	2.00
Dewberries	4@5
Blackberries	3@5
Raspberries	5@6
Gooseberries, lb	8@10
Strawberries	5@6
Watermelons, lb	1½@1¾

Dried Fruits.

Wholesale prices are:

Evaporated Apples, fancy, lb	20
Apricots	14@18
Figs, box	1.85@2.25
Peaches	9@10
Nectarines	10
Pears	13@14
Prunes	11@14
Plums	10@11

Beans Dried.

Wholesale quotations:

Limas	6.25@6.50
Black eyes	8.00
Pinks	6.25
Lady Washington	4.00
Small white	3.75@4.00
Garvanzas	4.50
Lentils	6.00@7.00

Nuts.

Wholesale quotations are:

No. 1 soft shell walnuts	18
Almonds, IXL, lb	17@18
Pecans, polished	15@16
Peanuts, Eastern	8
Peanuts, California	6
Pine Nuts	18@20

Honey.

Wholesale quotations:

Extracted water white	9
Extracted light amber	8
Comb water white	18@19
Light amber	15
Beeswax	30

Hay.

Buying prices f. o. b. cars Los Angeles are:

Barley hay	11.00@13.00
Wheat hay	12.50
Tame oat	13.00@14.00
Alfalfa	12.50

Grain.

Wholesale selling price f. o. b. Los Angeles:

Wheat, new, cental	1.70@1.75
Corn	1.70@1.75
Kaffir	1.75
Millet	3.25
Popcorn	4.75@5.00
Egyptian corn	1.65
White oats	1.80
Seed barley	1.50

Feed Stuff.

Wholesale selling price f. o. b. Los Angeles:

Alfalfa meal	1.15
Cracked corn	1.75
Cracked wheat	1.95
Shorts	1.90
Bran	1.65
Oil cake meal	2.50
Feed meal	1.80
Rolled barley	1.45

San Francisco Market

SAN FRANCISCO, July 11, 1911.

Butter.

A slight advance is noted on extras, with a generally firm condition prevailing. Receipts on some days are in excess of 100,000 pounds.

Price to trade 2½c in advance of the following Produce Exchange quotations:

California extras, lb	22½
Prime firsts	21½
California firsts	20½
Seconds	19

Cheese.

Cal. flats	10@12½
Cal. Y. America, fy, new	12½@14
Oregon, fancy	13½@14½

Eggs and Poultry.

A gradual advance on eggs has taken place during the week and extras are now at 26.

Official quotations of the San Francisco Wholesale Dairy and Produce Exchange are:

Fresh ranch extras	26
Prime firsts	24
Firsts	23½
Seconds	18½
Eastern seconds	15
Select pullets	21
Hens, doz	4.50@9.00
Fryers, doz	4.50@5.50
Ducks	5.00@7.00
Broilers	2.00@3.50
Roosters, doz	4.00@9.00
Geese	2.00@2.50
Pigeons	1.75@2.25
Squabs	2.00@2.50
Rabbits, doz	2.00@2.50

Live Stock.

San Francisco prices, gross weight:

Steers	4.00@5.25
Cows and heifers	3.25@4.25
Calves, lb	5@6¾
Hogs	5@7½
Wethers, No. 1, unshorn	4½@4¾
Milk lambs	5@5¼
Ewes, No. 1, unshorn	4@4¼
Shorn, ½ cent less.	

Potatoes.

Wholesale market quotations:

Early Rose	2.25@2.50
New Burbanks	2.25@2.75

Onions.

New green, box	50@65
Red, new, sack	85@1.00
Silverskins	1.25@1.60
Garlic, lb, new	3@3½

Vegetables.

Wholesale quotations:

Asparagus, box	1.25@2.00
Beans, string	1@1½
Beans, wax	1@2
Bell peppers	10@15
Carrots	60@75
Cucumbers, box	25@75
Corn, sack	1.00@3.25
Celery, crate	1.50@2.50
Chili peppers, lb	6@12
Cauliflower, doz	75@1.00
Egg plant, lb	10@15
Lettuce, crate	75@2.00
Okra, lb	6@10
Peas, sack	75@1.25
Summer squash, lug	40@50
Tomatoes, crate	35@40
Turnips	60@75

Citrus Fruits.

Valencias	2.00@3.00
Grapefruit	75@2.75
Lemons	2.00@5.50
Limes, Mexican	4.50@5.00
Tangerines, halves	1.25@1.50

Fresh Fruits.

Apricots, crate	1.00@1.25
Apples, Early Harvest	75@1.00
Apples, box	1.00@1.50
Apples, new, green, 20-lb box	50@1.50
Cantaloupes, ponies	1.25@1.50
Cantaloupes, standard	1.50@1.75
Cherries, white, lb	4@5½
Cherries, black, lb	7@8
Cherries, white and red	60@80
Currants, chest	8.00@9.00
Figs, layer	50@60
Grapes, Thompson Seed	1.25
Grapes, Malagas, box	1.50
Peaches, box	60@90
Pears, box	60@1.00
Plums, box	60@90
Loganberries, chest	2.50@3.50
Blackberries, chest	2.50@3.00
Raspberries, chest	4.00@6.00
Strawberries, Banners	7.00@8.00
Longworths	7.00@9.00
Malindas, chest	4.50@6.00
Pineapples, Hawaiian	2.00@3.50
Bananas	1.00@1.50
Watermelons, lb	1½

Dried Fruits.

DRIED FRUITS—1911 crop, f. o. b. carload lots, per lb.—Apples, 9@10c; Apricots, 14½@16½c; Peaches, 8¾@10¼c; Prunes, bluk basis, 4½@5¾c; per lb., 4¼@8c, with a premium of ½@1c on large sizes; Figs, 5@6c for White; Pears, nominal.

RAISINS—1911 crop; Seeded, per pkg. —Fancy, No. 16, 7½@7¾c; Choice, No. 16, 7@7¼c; Loose Muscatels, in 50-lb. boxes—Standard, 4-crown, 6½@6¾c; do, 3-crown, 6c; do, 2-crown, 5½c. Seedless—Muscatels, 5c; Sultanas, 6@6¼c; Thompsons, 6¼@6½c.

Nuts.

Walnuts, No. 1 soft shell	16@16½
Walnuts, No. 1 hard shell	14½
Almonds, '10, N P U	16@16¼
Almonds, '10, Nonp	18@18⅜
Almonds, '10, I X L	16½@16¾
Pecans	14@17
Chestnuts, California	6@8
Peanuts	5@5½

Beans Dried.

Limas	6.10@6.25
Pink	4.60@4.85
Black eyes	6.50@6.80
Small white	3.40@3.50
Large white	3.25@3.40
Kidneys	6.00@6.25
Garbanzos	2.50@3.25
Bayou	3.75@4.25
Horse beans	3.25@4.00
Red Mexicans	5.35@5.50
Cranberry	3.50@3.75

Hops.

Hops, coast, 1910	24@26
Hops, 1911 contracts	24½@27
Hops, Oregon, 1911	24½@27

Honey.

Water white, comb, '11	15
Dark comb	12½
Extracted white, '11	9@10
Extracted dark	6½
Beeswax, lb	24@30

Hay.

Scott, Magner & Miller say:

There has been received on the San Francisco hay market for the week ending today only 1600 tons of hay, part of which consisted of old crop and partly new. This amount is much below the normal, and under usual conditions it might be expected that the market should have strengthened.

There has been no distinction made in prices realized here between old crop and new; the new is selling practically on the same basis of prices as the old crop.

Trading in hay in the country recently is reported as very light for the reason that the prices being asked in the hay districts are somewhat higher than can be realized therefor both in this city and in Oakland, and, therefore, purchasers act cautiously and are taking hold only to such an extent as their present requirements justify.

As the situation is now being better understood, and the harvest yield of hay better determined, it appears that the crop will turn out much larger in extent and somewhat better in quality than even the most sanguine had hoped for, and which in addition to the large carryover stock of old crop hay will make available a satisfactorily large tonnage. Export trade on hay at the present time is decidedly light.

Alfalfa hay is in light supply as the summer demand has not yet begun. There is no trading in alfalfa in the river districts as yet, as the market is still absolutely undetermined.

Fancy wheat hay	14.00@14.50
No. 1 wheat or wheat & oat	11.50@12.50
No. 2 wheat or wheat & oat	10.00@11.00
Choice tame oat	12.00@12.50
Other tame oat	8.50@10.50
Wild oat	9.00@10.00
Stock hay	5.50@6.50
Alfalfa	9.00@10.50
Straw, bale	40@50

Grain.

Wheat	1.42½@1.50
Barley, fancy	1.28¾@1.30
Barley, good to choice	1.25@1.27½
Oats, white	1.50@1.60
Rye	1.50@1.60
Mustard, brown	5½
Alfalfa seed	18
Millet	3@3½
Flaxseed	5@5¼
Brom corn seed, ton	25.00@30.00

Feed Stuff.

Alfalfa meal	14.00
Bran, ton	27.50@29.00
Feed cornmeal, ton	33.00@34.00
Cracked corn	33.00@34.00
Rolled barley, ton	26.00@27.50
Rolled oats, ton	29.00@30.00
Middlings	32.50@35.00
Oil cake meal	42.00@43.50
Cocoanut cake, ton	25.50@26.50
Mixed feed, ton	25.00@27.00
Shorts	29.00@30.00

Deciduous Fruit Market

Manager F. B. McKevitt of the California Fruit Distributors, reports:

Sacramento, July 8, 1911.

The following gives number of cars of deciduous fruit shipped from all points in California for the week (seven days) ending Friday morning, July 7, 1911:

Cherries—17 cars. This fruit is now nearly done. There may possibly be a few cars to report next week, but they cannot last long.

Apricots—37½ cars. A little more than half as many cars were shipped this last week as during the preceding one. Scattering shipments will continue to go forward for the next few days. Movement last year was 290 cars. It is doubtful if it will reach a total of 225 cars for the present season.

Peaches—63 cars. Again this week a slight increase in shipment is noticed. It probably will be considerably greater during the coming seven days, when a movement of approximately 100 cars is expected. St. Johns and Hales now constitute the bulk of the movement. They will continue in ample supply during the next ten days and will be followed by Imperial and Early Crawford. A few boxes of the former have already made their appearance.

Plums—141¾ cars. The plum movement is now in full swing and comprises the same varieties as those mentioned in Market Letter No. 8, namely: Climax, Burbank, Tragedy, Simoni, Abundance, Red June, with small shipments of Santa Rosa, Wickson and Ogons. All plums being shipped now are of fine quality and many of them grade as fancy. The crop of plums in the river districts and in Placer county will not be as heavy as expected earlier in the season.

Pears—12¾ cars. A few Bartletts are now going forward, but the fruit is still too immature in most cases to be attractive. Shipments will materially increase during the coming week, and the quality will improve from day to day.

There is no change in the grape situation, which continues generally very fine. A little mildew is being reported in the irrigated districts, but, having been quickly cared for, will probably not affect the output. Thompson Seedless grapes are expected to move out of the Imperial district next week.

Sales Manager Tucker of the California Almond Growers' Exchange reports:

Sacramento, Cal., July 8, 1911.

We are pleased to report the formation of the Colusa County Almond Growers' association, which has joined hands with us and will market almonds through the exchange this season. This makes the third new association for 1911 business and makes a total of fourteen associations now affiliated with us. Most all of the old associations have added new members to their list and our source of supply has been increased accordingly.

On July 14 the delegates from the various associations will meet in Sacramento and determine the price that we will ask for our crops this season. Market conditions at this time are very good and we will be able to secure a good price for our members. In spite of the fact that our competitors have made quotations in the east, the trade have not bought anything, as they are waiting for us to set the price. They recognize us as a factor in the almond business.

The idea of labeling the bags has made a "hit" with the trade and there is no question that this will pay us several times over for our expense and trouble in this direction.

This will enable us to supply bags and labels for shipping purposes without cost to our members. In view of the legislation now being enacted in different states,

was decided by the delegates at their ast meeting to begin selling this year n net weights. Growers who desire bags or hauling the almonds from the orchard o the shipping house can obtain sec-nd-hand bags from us at a very rea-onable figure. Barley sacks or lug boxes nay be used for delivering almonds to he warehouse.

Citrus Fruit Market

LOS ANGELES, July 12, 1911.

A surprising strengthening of the or-nge market is noted during the past week. It was expected that the extreme eat would boost the price of lemons, which it did, but that condition does not usually obtain with oranges. However, whether from burning up of small fruit crops and causing a dearth in the market or other cause, big prices are being ob-tained.

As noted, lemons are exceptionally strong, selling far above the foreigns, and in every auction market as well as in farther western markets every offering has been picked up at long prices. Fair-ly good fruit has readily commanded from $5.00 to $6.00.

Shipments.

Shipments of oranges to date since November 1st, 1910, 33,056 cars, lemons 5,278, total 38,834. To same date last season: Oranges, 22,779 cars, lemons 3,632, total 26,411.

NEW YORK, July 10.—Twenty-three cars Valencias, two cars seedlings, one sweets, one bloods and one car lemons sold. Market higher on oranges, strong on lemons. Weather fair. Hot.

VALENCIAS.	Avg.
Corona	$3.40
Corona Standards	2.75
Old Mission, ch, Chapman	3.95
Golden Eagle, sd, Chapman	3.35
Lady Rowena, Chapman	2.80
Regina, ch, Growers' Ft. Co.	3.35
Regent, sd, Growers' Ft. Co.	2.90
Euclid, or, Growers' Ft. Co.	4.05
Uplanders, or, Growers' Ft. Co.	3.55
Glendora Heights, fy, A. C. G. Ex.	4.35
Glendora Heights, ch, A. C. G. Ex.	3.75
Evolution, A. C. G. Ex.	3.35
Iris, D. M. Ex.	4.15
Violet, D. M. Ex.	3.40
Jasmine, D. M. Ex.	3.20
Vista Bonita, A. F. Ex.	4.20
Lake Hemet, A. F. Ex.	3.80
Indian Hill, S. A. Ex.	4.05
Greyhound, S. A. Ex.	3.25
Valley Beau, S. A. Ex.	3.40
Whittier, S. T. Ex.	3.65
Violet, D. M. Ex.	4.00
Dan Patch, S. B. Ex.	3.45
Pony, A. F. Ex.	3.00
Echo, S. T. Ex.	3.60
Arroyo, S. T. Ex.	3.15
Parrot, S. A. Ex.	3.50
Albion, ch, Placentia M. O. A.	3.45
Elephant, Elephant Orchards	3.80
Elephant Seconds, Elephant Orchards	3.35
Florencia, xc, Randolph Ft. Co.	3.30
Royal Pack, ch, Randolph Ft. Co.	3.10
Hemet Heights, fy, Hemet L. & W.	2.45
SEEDLINGS.	
Titus Ranch, fy, San Marino G. P. A.	2.85
El Toreador, sd, San Marino G. P. A.	2.65
Red Bar	2.60
Uplanders (Pineapple)	2.15
ST. MICHAELS.	
Squirrel, A. H. Ex.	3.10
Palm Tree, A. H. Ex.	2.85
GRAPEFRUIT.	
Vista Bonita	3.25
Dan Patch	2.40
Tallyho	2.25
Big R	1.50
Squirrel	3.30
Palm Tree	1.70
Swastika	2.05
LEMONS.	
Greenleaf	4.60

PHILADELPHIA, July 10.—Five cars Valencias, three mixed cars and two cars lemons sold.

VALENCIAS.	Avg.
Eagle, A. F. Ex., Alessandro	$2.85
Planet, S. S. Ex., Orange	3.40
Pointer, A. C. G. Ex., Glendora	3.70
Champion, A. C. Denman & Son	3.30
Golden Pheasant, xc, Ind. Ft. Co.	3.15
Freedom, xc, Ind. Ft. Co.	3.00
Yankee Doodle, A. F. Ex., Alessandro	2.30
Stag, A. C. G. Ex., Glendora	4.25
Colombo, S. T. Ex., Placentia	3.15
Golden Pheasant, xc, Ind. Ft. Co.	3.25
Seal Rock	3.00
Country Club, ch, Rialto Ft. Co.	2.55
LEMONS.	
Arab, S. A. Ex.	5.15
Flower, sd, Ely-Gilmore Co.	4.05
Pup, S. A. Ex.	5.00
Plain	2.75
GRAPEFRUIT.	
Palomita	1.60
Champion	1.35

Milk Coolers, all sizes and prices. Guy F. Kelsey & Co., 106 East Eighth St., Los Angeles, Cal.

PITTSBURG, July 10.—Market higher on lemons and oranges. Cloudy and stormy.

VALENCIAS.	Avg.
Naralimo, or, Sparr Ft. Co.	$3.10
Dan Patch, A. F. Bloomington	3.60
Campfire, S. T. Ex., Nordhoff	3.20
Yankee Doodle, A. F., Highgrove	2.85
Jasmine, D. M. Ex., Duarte	3.50
Hawk, S. A. Ex.	3.10
Pony, A. F. Ex., Bloomington	3.35
Eagle, A. F. Ex., Highgrove	3.00
Iris, D. M. Ex., Duarte	3.85
LEMONS.	
Circus, xc, Sparr Ft. Co.	3.85
Squirrel, A. H. Ex., Prenda	4.25
Commercial, A. H. Ex., Prenda	3.95
Princess, Q. C. Ex., Corona	4.60
Lily, Q. C. Ex., Corona	4.55
Plain Ends	3.95
Palm Tree, A. H. Ex., Prenda	4.35
Coyote, O. K. Ex.	4.05
Pennant, Q. C. Ex., Corona	4.60
Blue Jay, O. K. Ex.	4.25

CLEVELAND, July 10.—Four cars Valencias, three cars lemons and one mixed car sold. Market higher on Valencias and lemons. Muggy. Thunder showers.

VALENCIAS.	Avg.
Homer, Q. C. Ex., Corona	$3.45
Trail, A. C. G. Ex., Lamanda Park	3.55
Iris, D. M. Ex., Monrovia	3.65
Jasmine, D. M. Ex., Monrovia	3.35
Sequoia, S. T. Ex., Fullerton	3.55
Premium, or, Benchley Ft. Co.	3.55
Camel, Q. C. Ex., Corona	3.40
Canyon, A. C. G. Ex., Lamanda Park	3.45
Violet, D. M. Ex., Monrovia	3.65
Argonaut, S. T. Ex., Fullerton	3.60
Colombo, S. T. Ex., Fullerton	3.35
LEMONS.	
Camel, Q. C. Ex., Corona	5.80
Pet, S. A. Ex.	5.95
Pup, S. A. Ex.	5.30
Standard	4.25
Family, Q. C. Ex., Corona	4.75
Arab, S. A. Ex.	6.10
Symbol, ch, Stewart Ft. Co.	5.25

ST. LOUIS, July 10.—Cloudy. Market firm on good stock. Eight cars sold. Prices lower on account quality of fruit.

VALENCIAS.	Avg.
Searchlight, S. S. Ex., Orange	$2.75
Partridge	2.60
Old Oak, ch, Tustin Pack. Co.	2.40
S. S., S. S. Ex., Orange	2.65
Gem	2.35
Purity, xc, Tustin Pack. Co.	1.25
LEMONS.	
Camel, Q. C. Ex., Corona	3.90
Mission, S. T. Ex., Santa Barbara	4.60
Blondina, S. T. Ex., Santa Barbara	2.95
Family, Q. C. Ex., Corona	3.20
Purity, S. S. Ex., Tustin	4.40
Mission Bells, ch., Randolph Ft. Co.	4.35
El Toro	3.45
Family, Q. C. Ex., Corona	2.30
Festival, st, Santa Barbara	4.40
Camel, Q. C. Ex., Corona	4.20
Red Hill, S. S. Ex., Tustin	4.75
Evergreen, S. S. Ex., Tustin	3.35
Chula Vista	2.95

CINCINNATI, July 10.—Muggy. Market advancing. Three cars Valencias and four cars lemons sold.

VALENCIAS.	Avg.
Searchlight, S. S. Ex., McPherson	$3.15
Hunter, A. C. G. Ex., Charter Oak	3.15
Yankee Doodle, A. F., Highgrove	3.05
S. S., S. S. Ex., McPherson	3.05
Eagle, A. F., Highgrove	3.20
LEMONS.	
Corona Beauty, Q. C. Ex., Corona	3.65
Purity, S. S. Ex., Tustin	4.40
Pup, S. A. Ex.	4.35
Grove, Q. C. Ex., Covina	2.90
Arab, S. A. Ex.	5.05
Del Oro, ch, Sparr Ft. Co.	3.85

THE HOME TESTING OF LINSEED OILS.

Use good oil for your paints. Poor linseed oil gives a poor paint. A poor paint soon becomes unsightly and gives poor protection to buildings against rain and sun. Poor protection causes rapid deterioration and calls for frequent repairs and renewals.

The Thirteenth Biennial Report of the Minnesota Dairy and Food Commissioner, just issued, states that one hundred out of one hundred and twenty-four samples of linseed oil examined did not comply with the state law controlling the sale of this product. Ninety of these illegal oils were found to be adulterated with mineral oil. The state inspectors confined their selection of samples largely to those oils which in their experience they have most often found adulterated. Consequently these figures indicate a higher percentage of adulterated oil than is actually to be found on the Minnesota market. It cannot be doubted, however, that there is a large amount of such oil sold.

To test your oil, place a piece of glass on a black surface, or preferably cover one side of the glass with black paint or enamel. Pour about a teaspoonful of the oil on the untreated side of the glass and hold in the direct sunlight. The presence of even small quantities of mineral oil can readily be detected by a distinct blue to green fluorescence, or play of colors, resembling somewhat the color noticeable on the surface of water when a little oil is present. Compare the appearance of the oil with a little machine oil treated similarly. Nearly all machine oils are composed principally of mineral oil and the fluorescence will be unmistakable.

A very slight fluorescence in linseed oil is not absolute proof of adulteration, but it is a very good indication of the presence of mineral oil, and oils exhibiting it should be rejected in favor of those showing no fluorescence, or they should be accepted only after chemical analysis has shown them to be pure.

The admixture of fish oil with linseed oil can often be detected by the sense of smell. The disagreeable fish odor is especially pronounced if the oil is heated and a small amount of the warm oil is rubbed on the hands.

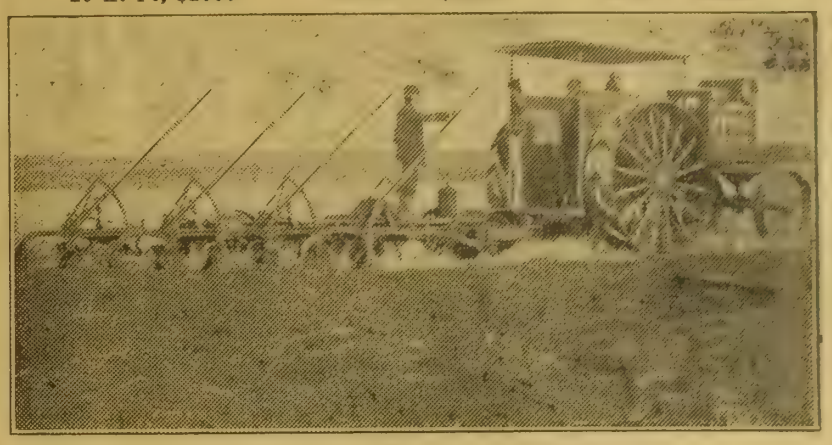
Other forms of linseed oil adulteration cannot be readily discovered without the aid of a chemical analysis. Fortunately, however, the use of fish oils and other seed oils for such purposes is rare.

It should be noted, in justice to Minnesota linseed oil manufacturers, that all of the adulterated samples reported by the Dairy and Food Commission, with the exception of three of unknown origin, were manufactured outside the state.—G. W. Walker, Minnesota University Farm.

Cream Separators, all sizes and prices. Guy F. Kelsey & Co., 106 East Eighth St., Los Angeles, Cal.

Flour City Gas Engine

20 H. P., $2000 30 H. P. $2600 40 H. P. $3500



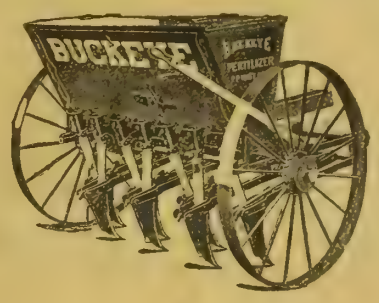
Read and Be Convinced:

Hawley, King & Co., Los Angeles, Cal., April 24, 1911.
Los Angeles, Cal.

Gentlemen—Replying to your question as to what I am doing with the 40 H. P. "Flour City" Gasoline Engine, will say that I am pulling 12 10-inch Plow Bottoms ten inches deep on my ranch near San Miguel. The ground is dry and very hard and we are using fourteen horses on 4 10-inch bottoms and cannot plow over six inches deep with our horse plows.

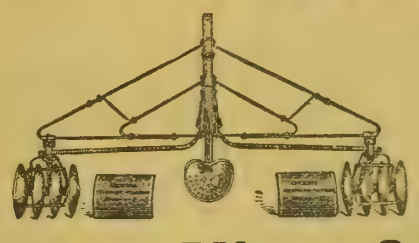
Yours very truly,
(Signed) PETE VALENZUELA.

Improved Buckeye Fertilizer Drills



Sows Tankage Peas and Vetch

Improved Deere Orchard and Vineyard Harrow



Model R with Extension Frame

Hawley, King & .Co

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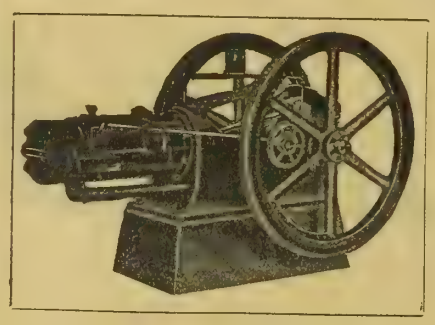

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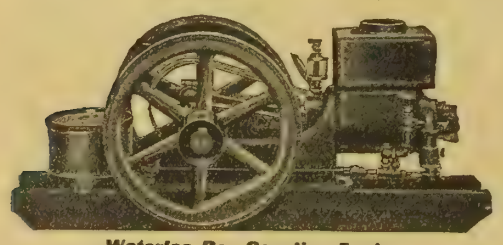

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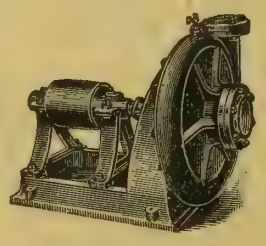

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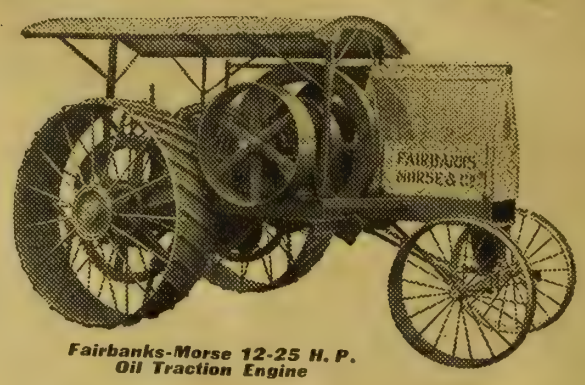

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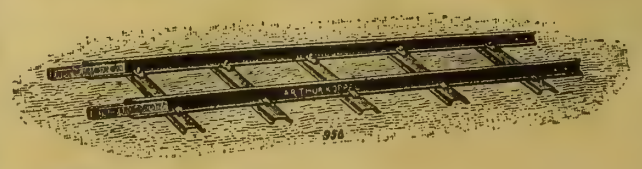

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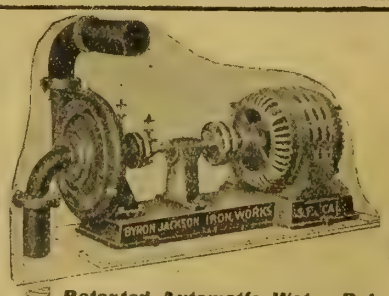

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California Cultivator

Vol. XXXVII. No. 3. LOS ANGELES: THURSDAY, JULY 20, 1911 One Dollar the Year

The Brown Spot of the Navel Orange

By Dr. J. Eliot Coit, Southern California Pathological Laboratory,
in Proceedings of the Society for Horticultural Science.

There are a large number of spots, cars and other blemishes which tend o reduce the quality and grade of ranges or cause them to be thrown n the cull heap. The writer has un- ertaken a study of all blemishes of alifornia oranges and has now under nvestigation thirty separate and dis- nct kinds, any one of which may be esponsible for lowering the grade ith a consequent reduction in the oney returns. The relative impor- ance of these varies widely in the ifferent packing houses and in dif- erent years. Averaging the results rom counts in a number of houses is year, we find that the most im- ortant of these are splits, brown pot, calluses caused by the wind mov- ng the fruit which is hanging low nough to touch the ground, thorn unctures, sun burns, thrips scars and orm holes caused by Tortrix cit- ana. At the present time there are en out of the thirty kinds of blem- shes, the causes of which are not un- erstood, the two chief ones being rown spot and splits.

On December 5, 1909, a car of Navel ranges was packed in the vicinity of iverside. This car was billed to hicago. On its arrival the agent here reported the fruit in good condi- on, but with a slow market he was id only $2.60 per box. The car was herefore diverted to Boston and on s arrival there, three weeks after ate of picking, the fruit was reported o badly spotted that the agent was ble to secure only $1.80 per box. In his case, which is typical of a great any, sufficient brown spots developed hile the car was going from Chicago o Boston to entail a loss of $307.20. t is impossible to estimate, with any egree of accuracy, the total loss aused by brown spot, for the agents n the eastern markets fail in most ases to differentiate between the any kinds of spots. Then again, hen a market is slow an agent will ften report fruit as slightly spotted, hereas had the market been brisk, uyers would not have been so critical nd spot would not have been men- oned.

escription of the Brown Spot.

The brown spot of the Navel orange ay be described as occurring irregu- rly over the surface of the orange. rom one to fifty or more spots may evelop on a single fruit. The spots ary in size from a mere point to one ch in diameter, averaging about one- ourth inch. In outline they seem to llow no rule and may be quite irreg- lar, although the circular spot is ost common. The color of the spot aries in different localities from a ale brown, which attracts little no- ce, to almost a black, in which case e good appearance of the fruit is ined. The eating qualities of spot- ed oranges are not injured in the least. The color of the spot seems to be lighter near the coast and darker in the interior valleys. Losses from brown spot have been heaviest from the upper San Gabriel and Santa Ana Valleys because in these regions the spotting is more common and the color changes to a darker brown. On the other hand, the fruit from many of the packing houses near the coast shows brown spots of such a pale tint as to attract no notice on the market. The spots are darker on early picked fruit, and it seems to be true that if the fruit is left on the trees until very late it will not spot at all. The spots are slightly sunken on account of the fact that the surface cells have collapsed. The dead and collapsed tissue extends from the surface to about one-fourth the thickness of the rind. In 1909-10 no spots were visible while the fruit was on the trees and as a rule the spots are not noticeable till from 15 to 25 days after picking. On this account it is not possible to grade against this spot in the packing houses, unless storage houses of sufficient capacity are built to hold the pickings of three or four weeks. This year, however, I have found a very few specimens of fairly typical brown spot on the fruit on the trees.

The brown spot has been observed so far only on the Washington Navel variety of orange. Spotting is also uniformly worse on fancy smooth, thin-skinned fruit. The fruit which grades highest as it comes from the orchard always spots much more than the rough fruit, which often remains exempt. Examination of the spot with a hand lens fails to show any abrasion or opening in the epidermis.

Orange packers have been complaining of the brown spot for only four or five years, but it is probable that it has existed, though varying in severity, as long as the Navel orange has been cultivated in California.

Investigations of the Cause of Brown Spot.

It may be stated at the outset that nothing has been found so far which would seem to indicate that the brown spot is caused by parasites such as fungi or bacteria. It appears to be purely a physiological disease. The writer has not been able to find in scientific literature a description of any disease strictly comparable to the brown spot, and we have been thrown entirely on our own resources in searching for a cause. The nearest approach to a parallel case seems to be the "Bitter Pit of the Apple," as described by I. B. Pole Evans, of South Africa; D. McAlpine, of Australia, and various investigators in this country. The bitter pit, however, differs markedly in that the pits occur to a large extent before the fruit is picked from the trees.

Ralph E. Smith found that the normal rind of a green orange functions as a leaf and manufactures starch in abundance. With the disappearance of the chlorophyl at maturity the remnant of starch is changed to sugars, the fully mature orange containing no starch in the rind. It was found, however, that the brown spots gave a distinct reaction to iodine, showing that in these diseased cells the diastatic action was in some way inhibited.

Smith also found that freshly-picked fruit, upon which the spots had not yet become visible, when decolorized and treated with iodine would show blue spots indicating the presence of starch at those places which would have turned brown later. This seems to indicate that the trouble originates while the fruit is on the tree and suggests the presence of some enzyme which inhibits diastatic action during the time the fruit is coloring. Smith also observed that the coloring of the fruit was more rapid, and the starch normally disappeared from the rind more quickly in those localities where the brown spot was more severe.

Investigations have been carried on along many different lines of inquiry and while the results are so far all negative, they are presented here on account of the possible value of such negative results in narrowing down the investigation and because of various interesting by-products.

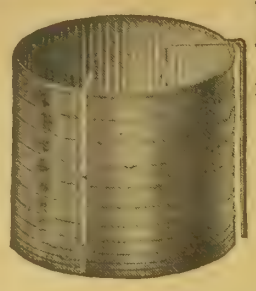
Various Experiments.

In experiment No. 1 it was found that the position occupied by the fruit on the tree seemed to have no appreciable effect on the liability of the fruit to spot. Several trees were selected in one orchard, the fruit from which had spotted badly. On Feb. 4 a number of sound oranges were picked from the north, east, south and west sides and also from the inside of the trees. The fruit was stored in the packing house and when examined three weeks later was found to be 53 per cent spotted, the spots occuring about equally in each of the different lots. Experiment No. 1 was conducted by Mr. H. J. Ramsey at the instance of Professor R. E. Smith, who later turned the work over to the writer.

In experiment No. 2 it was shown that if the oranges were picked before October 1 or before they had begun to color, that as they gradually turned yellow in storage, spots would appear which would remain green instead of turning brown. Such green spots are usually from three to five times larger than typical brown spots.

An impression was prevalent among the growers that the spotting was worse on fruit grown at the higher elevations along the slopes of the foothills. Accordingly in experiment No. 3 fruit was picked from different orchards in order to test this point and to bring into contrast other conditions. Fruit from orchards on the foothills was contrasted with that from the low level land. Fruit from heavy red soil was stored beside that from light sandy soil. In all, many boxes of fruit were collected and stored from each of eleven different localities in Southern California. After the fruit was examined three weeks later and all the figures tabulated it was found that the spot varied from 8 to 89 per cent in the different localities, but a careful study of the figures failed to show any correlation between soil type and brown spot. In one locality the foothill land or the heavy-land would show the most spot, while in another locality just the opposite would obtain. In general, it was found that near the coast a longer time elapsed between picking the fruit and the appearance of the spot and the spots averaged a lighter brown and were less objectionable than in the interior valleys where the soil contains less humus and much higher temperatures prevail in summer.

Experiment No. 4 was planned to determine what effect the retardation of the loss of water by evaporation from the fruit would have on the development of spot. It was thought that if the brown spot could be controlled by checking evaporation that the substitution of heavily waxed paper for the ordinary tissue wrapping paper would constitute an easy and thoroughly practical remedy. Accordingly a number of oranges were picked, using care to avoid any abrasions or bruises. These were placed under bell jars on tables in the laboratory at ordinary room temperatures. It was found that if the skin of oranges was not broken in any way that the fruit would not rot, but would remain in good eating condition for six or seven months. The oranges used as checks which were left outside of the bell jars lost water rapidly, but did not decay. They eventually became as hard and dry as wooden balls. Unfortunately for this experiment, no spots developed either on the checks or the bell jar fruit. A more practical experiment was next tried in the packing houses. Different lots of fruit were wrapped in each of three kinds of paper, using wax paper, a parchmyne paper imported from Germany, and ordinary orange wrapping paper. This work was carried on in twelve different localities, including four counties, during January, February and March, 1910. When the figures were all brought together and tabulated and averaged, it was found that the following per cent of spot occurred under the different papers: Waxed, 42 per cent; parchmyne, 53 per cent, and common wrappers, 50 per cent. The results were decidedly disappointing, especially in view of the fact that the results were not at all uniform. In some cases the waxed paper showed the



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least spot, while in others the opposite was the case.

In experiment No. 5 an attempt was made to artificially produce the brown spot and many other forms of blemishes by cutting, bruising, scratching and kneading the green, half-grown fruit, and also by spraying or dropping on the green fruit various acids and other caustic substances calculated to cause injury. The results of this work gave us hints as to the causes of a number of common blemishes as ordinarily met with in the packing house, but no brown spots rewarded our efforts. Even where the fruit was gently kneaded between the balls of the fingers without in any way injuring the surface, the fruit after picking failed to develop spots which would correspond with the points where pressure had been applied.

While it seemed fairly certain that the brown spot was not caused by parasites, it was thought best to leave no stone unturned, and in experiment No. 6 the fruit was soaked in disinfectants. Lot a was soaked one minute in copper sulphate solution (1 pound to 1,000 gallons) and later developed 36 per cent of spot; lot b was soaked one minute in permanganate of potash solution (½ pound to 1,000 gallons) and later showed 16 per cent spot; while lot c, which was left untreated, developed only 8 per cent of spot. These results showed that disinfectants at least did not reduce the amount of spot, and the experiment as a whole was devoid of any interesting results.

Experiment No. 8 carried us into the field of entomology, for we could not ignore the possibility, however improbable, that brown spot might be an after effect of some insect injury. Accordingly, every kind of sucking insect at all common around the orchard was placed under suspicion and watched. In some cases cages of glass and cloth were made and a half-grown orange enclosed with several individuals of one kind of insect. So far no positive results have been secured, although these experiments are still in progress and a final report cannot be given at this time.

Oranges were found to spot badly before any frosts had occurred, and it can be said with certainty that the spot cannot be due to the effects of frost.

Fruit was also put up from fumigated and non-fumigated orchards, and the results showed that the spot developed without respect to fumigation. Fumigation burns, moreover, are easily recognized, and form a distinct class of blemishes.

Experiment No. 9 consisted in a series of experiments which were made in the effort to produce the brown spots by injecting into the rind, with a hypodermic needle, various substances calculated to affect it injuriously. Some of the substances tried in various strengths were alcohol, ethyl nitrite, formic acid, distilled water, air, oxydase extracted from brown spot tissue, and enzyme extracted from green persimmons.

Conclusions.

None of these attempts to produce the brown spot were successful, although some very interesting observations were made. It was found that an injection of distilled water caused the rind to increase in thickness from 75 to 100 per cent at that point, resulting in a small circular protuberance about one-half inch in diameter of hard, dense tissue with thicker wadded cells. The oxydase injected seemed to produce very little effect worthy of extended description. The most important observation afforded by this experiment may be described as follows: Whenever a chemical such as alcohol or acid was used the tissue was immediately killed in a symmetrical circular area, the diameter of which varied with the amount of chemical injected. These dead spots at once lost water, becoming dry and hard. After two or three weeks a ring about one-sixteenth of an inch wide immediately surrounding the dead tissue appeared to collapse and present an appearance exactly similar to brown spot. The width of this brown spot ring was seen to increase slightly for several weeks after the orange was picked. This observation suggested that oxydizing enzymes, which may have been set free by the death of the chemically-killed cells transfused into the adjoining living cells, and since these cells were no longer receiving food solutions or manufacturing starch (the epidermal cells having lost their chlorophyl and turned yellow), they were unable to resist the effects of the encroaching ferment.

These observations led me to conclude that the direct cause of brown spot is the oxydation of the protoplasm by enzymes which occur in the protoplasm itself but which are prevented from acting as long as the orange is joined to the tree and receiving water and certain nutritive substances from the tree. Thus the resistance of the protoplasm to enzyme encroachments gradually grows less from the time the orange is picked.

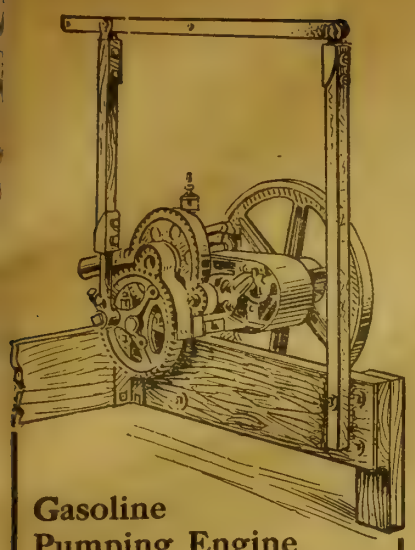
Thus while I may attribute brown spot to a premature death of certain groups of cells lying at and near the surface, this only takes the real question one step further back, for the practical citrus men will, of course, wish to know the primary causes which bring about such premature death and an economic method of preventing it.

Meanwhile the investigations are being continued in an attempt to answer this perplexing riddle, and any suggestions from others who may be working on similar problems in other parts of the country will be considered with appreciation.

RUSSETING OF FRUITS.

Usually the rust mite does not occur in a grove later than the middle of July. Some years, however, it continues to work vigorously late in the fall, and in some groves as late as into January, causing bright fruit to russet even after it had become ripe. Last spring was exceptional in regard to the activities of this little pest. Ordinarily it need give us no concern before the middle of May. Many of us, however, were unpleasantly surprised to find that the crop of fruit had been greatly damaged by it before the first of May.

The rust mite is the smallest animal belonging to the spider family. A single individual cannot be seen by the ordinary eye. Nearly every one, however, can detect rust mites by the unaided eye when they occur in countless numbers on citrus fruits, as they are likely to do some time during May. They may be detected on the fruit by a very delicate light coloring, as if the fruit had been dusted from a roadside. When this inconspicuous dusty apearance occurs, one should use the hand lens to determine whether this condition is due to dust which has arisen from the soil, or whether it is due to myriads of rust mites on the fruit. If it is found that the rust mite is present, this is a signal for immediate action.



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The rust mite, like other spider mites, is extremely sensitive to sulphur compounds; consequently we have a cheap remedy in almost all kinds of sulphur mixtures. The most effective, and at the same time, one of the cheapest, is the sulphur spray, made of sulphur and caustic soda. The lime and sulphur mixture is also very effective. Only two quarts of these sulphur solutions are usually needed to forty or fifty gallons of water.

A less effective, though somewhat cheaper method of treating rust mite is by means of flowers of sulphur. This is a fine powder of brimstone and may be applied with a powder gun. Before the invention of these powder guns people treated citrus groves effectively by throwing handfuls of powdered sulphur into the trees. A mixture of flowers of sulphur with about three parts of air-slaked lime is a little more easily applied, and sticks to the leaves better than the sulphur alone. By mixing the lime with the sulphur the workmen are able to see what parts of the tree have been treated, and so do the work more thoroughly.

The dry insecticides for rust mite should only be applied when the trees are moist with dew. In a large grove this requires much night work, to which most laborers object.

Other forms of contact insecticide may be used more or less effectively, but should be avoided unless one has in mind the double purpose of destroying rust mite and scale insects at the same time.

A grove that is kept thoroughly irrigated is not apt to be badly affected by rust mite, since these mites do not endure a moist atmosphere. It is however not safe to rely upon an irrigating plant as a preventive of russeting of oranges.—P. H. Rolfs in Florida Agriculturist.

A NEW MANGO.

A new mango to which our attention has been called fruited for the first time this year. It is known as Langra Benarsi, and is an importation from India. The fruits are entirely free from fiber and are very large. Specimens on a young tree just commenced bearing weighing three pounds and one ounce, and measuring nearly eight inches long. Promises to be very prolific and is a strong grower. Flavor is rich and spicy. Fruit is yellow or greenish yellow and is oblong.—Modello Tropical Topics.

INFLUENCE OF FLOWERS.

Children reared in homes where the parents are indifferent to the appearance of the home grounds are indeed unfortunate, for they lose nearly all chance of acquiring that love of the beautiful which is so elevating, so ennobling.

Those who early in life become imbued with a love of nature through home influences, carry it through life and it is a constant source of pleasure, not only to themselves, but to all who come in contact with them—an intense love of nature which marks them above their fellows. History proves that a taste for gardening has kept pace with the progress of civilization, and that it has always exerted a powerful influence upon the passions and feelings of mankind.

The Farmers Club at Ukiah, Mendocino County, has proven itself able to handle practical marketing questions as well as making itself a social and literary factor. At its last meeting a fine poultry exhibit was made.

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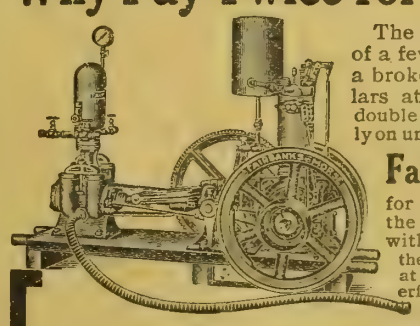

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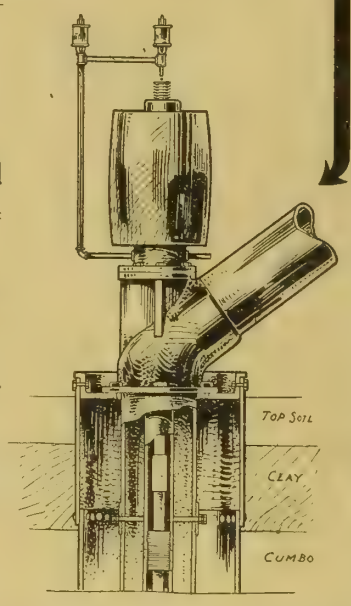

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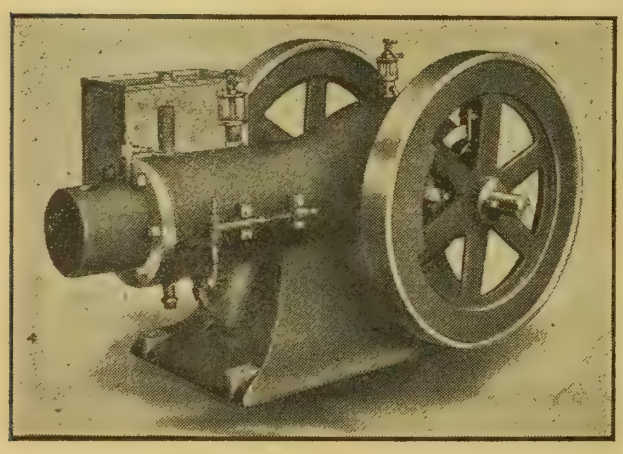

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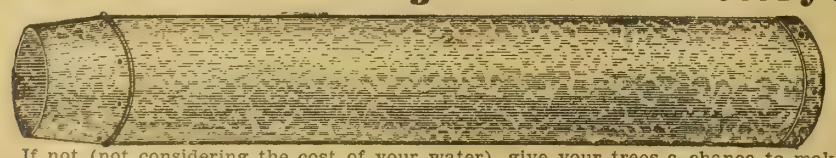

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THE APHIS AND THE STATE LAW.

(The following statement by Prof. Woodworth makes his position rather clearer than his former article, and we give place to it willingly, though we feel it wiser to close the argument with this number, unless Commissioner Jeffrey wishes to reply, as he is entitled to.—Ed.)

By C. W. Woodworth.

It is not at all undesirable to discuss freely such matters of public interest as the horticultural law. In a recent number of the Cultivator, State Commissioner Jeffrey has opened up the question in a very satisfactory manner though taking different grounds from those presented by me in a former issue.

Mr. Jeffrey's article is largely given to disproving two propositions which are entirely foreign to my views. 1st. It was not intimated that the whole law, nor even a large part of the whole law was unconstitutional. I was perfectly aware that many points had been approved by the supreme court, indeed all the points mentioned by Mr. Jeffrey have long been matters of common knowledge through publication by the state commissioner. The point which I mentioned, however, has never been adjudicated and probably never will, since any commissioner would back down before allowing it to come before the court. 2nd. No question was raised as to the constitutionality of the law in requiring certain police duty as long as that duty could be performed without violating rights guaranteed by the constitution.

I did point out that health laws in addition to the common police regulations also provide for extraordinary police powers which would be unconstitutional for any other purpose than the prevention of epidemics, and that the horticultural laws cannot rightly claim these greater powers simply because of similarity of wording, and in this I am sure Mr. Jeffrey will fully agree. Sometimes a case arises like that of the black peach aphis where the ordinary police powers are inadequate, cases where public interests would seem to demand the destruction of property. The orchards in question are valuable properties notwithstanding the presence of the aphis. The cost of the treatments that were required were out of all proportion to the possible benefits that might come to the owner of the orchard. The only possible justification of the work was the benefit that might accrue to the community at large in event of complete eradication of the insects. The work, if completed, bids fair to require the complete destruction of the infested orchard, and if not to be completed no public benefit whatever has been secured, though already there has been considerable loss to the orchardists concerned.

The only just way, and the only constitutional way, such work can be done for the public benefit is to provide for the cost out of public funds. This was not by any means intended as "vague criticism" but as the presentation of a workable plan for accomplishing a public service for which the police powers created by our horticultural law cannot be made effectual.

The real fundamental question in this whole matter is the meaning of the law in the use of the word "eradicate." Mr. Jeffrey urges that it should be considered synonymous with "abate."

The work at Lankershim was in no sense an effort to "abate" the trouble. The cost of the work was many times greater than would be necessary to prevent the insects doing serious injury. The kind of work done against the black peach aphis was strictly an attempt at complete eradication and was done professedly under the state law. If Mr. Jeffrey is correct in his contention that the whole purport of the act is in opposition to the strict interpretation of the word eradication the county commissioner exceeded the powers conferred upon him by the law in attempting to do more than abate the nuisance.

If Mr. Jeffrey is correct in this the horticultural laws mean quite a different thing than that which many county officers have supposed.

If such is the real intent and purpose of the law, then the most important improvement that can be made is to write this meaning, in plain language, into the law so that officers operating under the law will not make the mistake of supposing their duties require them to attempt to eradicate insects.

Historically there can be but little doubt that the original framers of the horticultural law intended real eradication. The codling moth and the San Jose scale had but recently been introduced into the state. They did not expect to have to adjust their horticultural methods so as to continually fight such pests, but looked for the times when they might be relieved of them entirely and expected the law to be the means of driving these pests out of the state.

The law has been revised and amended from time to time changing such things as the number and compensation of the county commissioners, but no restating of the essential features of the law has ever been attempted, notwithstanding the fact that nearly every one has long since given up the idea that our important insect pests will ever cease to be a factor in fruit growing in this state.

Every now and then a zealous horticultural officer will attempt to require the eradication of an established insect, and put a lot of people to needless expense, and after a little while he sees how really impotent he is and gives up the work.

People are generally so law-abiding that they are inclined to accept anything that comes with the semblance of authority. A horticultural commissioner thus even when clearly exceeding his authority can inflict serious financial loss on the community.

The law should clearly prevent the requiring of unnecessary and hopeless sporadic efforts.

On the other hand it would be very unwise to eliminate the idea of eradication from the horticultural law. When insects have not become established they can be and have often been, eradicated. Horticultural officers have done their best work in the eradication of such pests being introduced on nursery stock. We have no reason to believe that the most careful inspection will prevent the ultimate introduction of the in-

sects, and they will surely become established sooner or later if the effort towards eradication is limited to the inspection of nursery stock.

There will be no difficulty in deciding in the extreme cases whether eradication or control should be undertaken. No one hopes to eradicate the codling moth, for instance, and all hope to be preserved from having to try to control the fruit fly. Between these two extremes lies the difficulty. At the one extreme enormous property values are involved, and great expense would be required in an effort at eradication. At the other extreme little or no actual property is at stake and the cost of eradication is also nominal.

It has been the common practice to make a double interpretation of the law and give each case its logical treatment. The inadequacy of the present law comes out most prominently in the more difficult cases where there is considerable property involved and where an attempt at eradication is desirable, though expensive, and where the outcome is doubtful. Just such a case was that at Lankershim, where I assumed that the law applied but was unconstitutional when so applied and where Mr. Jeffrey, upholding the law, makes doubtful its applicability to such an effort at eradication.

The law should be so worded that there could be no ground for doubt that it did apply and so that no valid criticism could be made respecting the equity of its operation.

When an insect has gained a foothold but is not so fully established as to make eradication hopeless no one will question the desirability of attempting to eradicate it. Eradication work is very sure to fail if left to the property owner as provided in the present law, as long as "an earnest attempt to abate" is construed as compliance with the law. The insect need not become very widespread before the cost of a campaign that offers any hope of success is too great to be in justice chargeable against the property since it would often amount practically to confiscation.

The new law, when it is made to really practically meet such situations, should provide full indemnity for those whose property is to be destroyed or injured. If the pest in question is a recent introduction into the state, the legislature should provide for the work and the state commissioner should have some funds always available for emergencies. If the insect is already established within the state as is true of the black peach aphis, any county or community could provide the necessary funds for the attempt at eradication. The state legislature and the county boards of supervisors, upon the expert advice of the state or county commissioners would be the judges of the status of the pest in these doubtful and difficult cases. County ordinances making such provision would not be in conflict with the present state law and such was the practical suggestion made in my former article.

In conclusion, I can approve most heartily Mr. Jeffrey's suggestion that an attempt be made to improve the present horticultural laws and would like to suggest the appointment of a strong committee on that subject at the next fruit growers' convention, including representatives of all interests, and suggest further that it be instructed to consider especially such essential features of the law as those raised in the present controversy.

POLLINATION OF ORCHARD FRUITS.

More than 100 years ago (about 1793), the German botanist, Sprengel, published a book in which he showed as a result of his observations the part insects play in the pollination of flowers. This work, many statements of which have been disputed, proved a stimulus for further work and observation in pollination of fruits. Sprengel himself probably did not understand how important cross-pollination is in nature.

Later, Andrew Knight, in England, carried on experiments in cross and self-fertilization of the pea, which showed that it was probably intended in nature that plants should be cross-fertilized.

Darwin was the first to establish clearly the true value of crossing and show the interesting modifications of plants to aid in cross-pollination. In Darwin's "Origin of Species," cross-fertilization is especially emphasized. But it was not until some time later that much attention was paid to his theories.

M. B. Waite, of the Department of Agriculture, Washington, conducted some very valuable work with apples and pears about twelve years ago. Since that time many experiment stations and a few individuals have made systematic studies of this and many other plant-breeding problems.

Many plants are sterile, as far as their own pollen is concerned, but will readily respond to pollen from other plants. Some fifty plants are known to be thus self-sterile, but they will bear fruit if pollenized with pollen from other plants. C. I. Lewis, of the Oregon Experiment Station, Corvallis, Ore., has found that out of eighty-seven varieties of apples worked with, fifty-nine varieties were self-fertile, fifteen self-sterile, and thirteen varieties partially self-fertile.

Many varieties naturally tend to be sterile when limited to their own pollen and a knowledge of these is important in pollination work. A sterile variety is one that will not fertilize its ovule with its own pollen; the pollen of a fertile variety will do this. Investigators have found that climatic conditions affect the sterility and fertility of varieties, so that tests must be made in different climates.

The method employed to test this is to enclose the blossoms in manila bags before they open, thus preventing any outside pollen from entering the flowers; and if the blossoms fail to set fruit after the pollen has been distributed on the stigmas, the flowers are said to be self-sterile.

Among self-sterile varieties of apples, according to Lewis, are Early Strawberry, Gravenstein, Haas, Jonathan, McMahon White, Pewaukee, Rome Beauty, Salome, Tolman, Sweet Transcendent crab, Wealthy and York Imperial.

Self-fertile: Baldwin, Grimes' Golden, Duchess, Scott's Winter, Shiawassee and Yellow Newtown.

Partly self-fertile: Ben Davis, Whitney and Yellow Transparent.

It has been found that certain varieties make better pollenizers of varieties than others. For example, better results were obtained by crossing Spitzenburg with either Jonathan or Baldwin than with Newtown, and very much better than when self-pollenized. In determining the pollenizers for any variety, we must choose those that blossom at the same time as the one to be pollenized, and they should bear a large quantity of pollen, although this is not essential.

In planting an orchard, it is well to set alternately about two rows of a variety that is weak in pollen, and then two rows of one strong in pollen, etc. They must be close enough so that insects will visit each easily. Wind has been found to be a poor conductor of orchard pollen.

The floral envelopes of flowers tend to attract bees and insects, but they quite readily visit flowers not having conspicuous floral envelopes or where the envelopes are gone.

Climatic conditions have considerable influence on the blooming periods of fruits. In cold, frosty localities, varieties should be selected in reference to their blooming periods, and success will more often result.

The length of time that pollen will keep varies. It may safely be kept two or three weeks, and even longer if not allowed to ferment.

In the work of cross-pollenizing at Corvallis, it was shown that immediate effects of pollen on color of fruit were seen. Also the crossed apples were heavier, and the seed was also heavier. Many of the self-sterile varieties when self-pollinated were found to be seedless or had small seeds. When the self-fertile varieties were cross-pollenized, an improvement in size was noted.—Southern Fruit Grower.

BLACK PEACH APHIS.

Speaking of the effect of black peach aphis, Prof. Warren T. Clarke recently cited the case of profitable bearing trees which were badly infested with black peach aphis as far back as 1902. These trees are located in the orchards of Mr. Geo. D. Kellogg at Newcastle. Sometimes for two consecutive years no aphis will appear, but the following year they may require considerable attention. The cost of control is not so great that the orchard has ceased to be profitable.

One method of control where the aphis is not bad is as follows: As they emerge from the ground they usually make their first attacks on the lower limbs, especially on suckers or water sprouts coming near to the base of the tree. These suckers should be watched and as the aphis appears, the sucker growth should be cut and burned immediately or the aphis destroyed by the use of a blow torch. This prevents their spreading to the upper branches of the tree.

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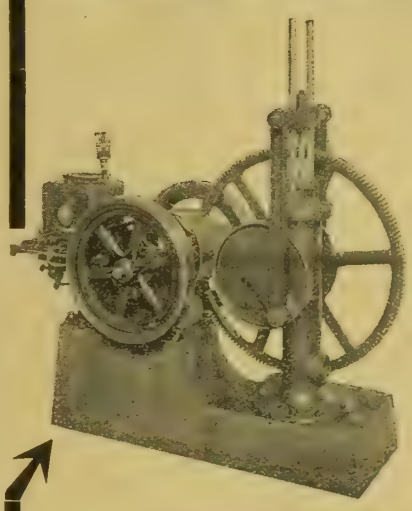

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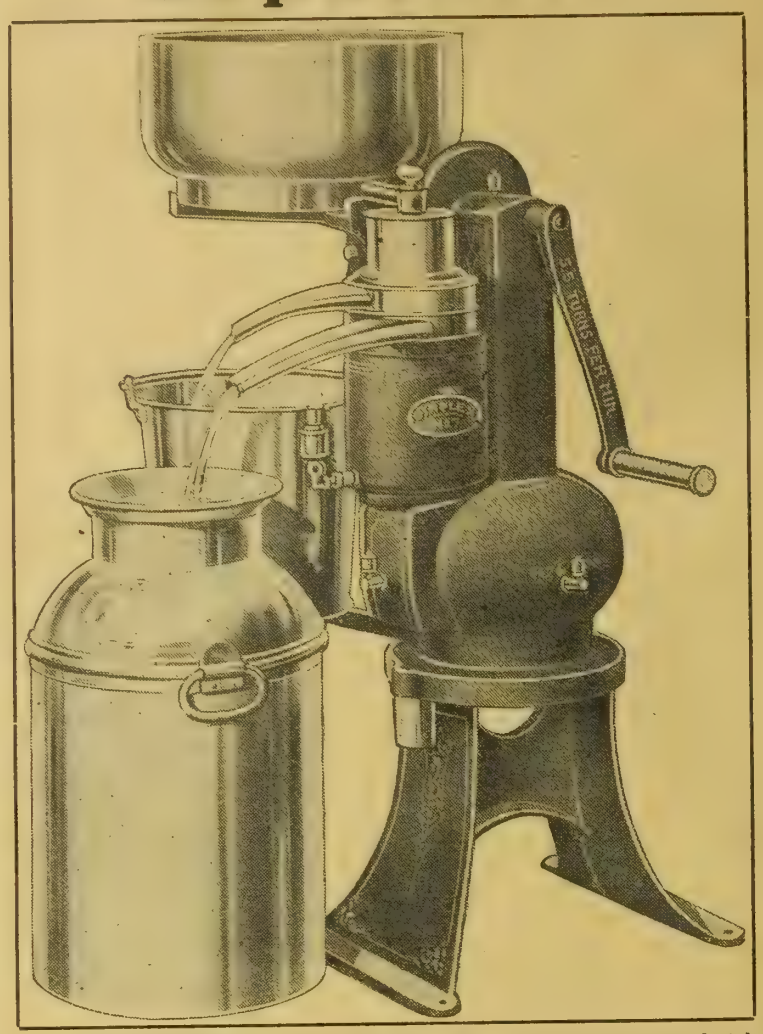

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THE GAIN FROM RECORD-KEEPING.

Before the results of modern herd records were known, dairy cattle were admitted to the herd-books, and bought and sold, chiefly on their outward appearances. There was no standard by which to determine the relation of form to production. A nice-looking cow was the one which brought the most money. What constituted such a cow was largely a matter of opinion or prejudice. With the introduction of herd records, opinions came to be valued in direct proportion to one's understanding of the relation of form to production. Everything must be determined in the light of the scales, the Babcock test and the cost of milk-production.

To Minnesota must be awarded a large portion of the credit for the inauguration of the newer and more rational system. For the past twenty years the milk fom every cow in the station herd has been weighed and tested morning and night; and at least twelve years ago it was found that certain cows in the herd returned $55.54 per cow, while others returned only $8.19, after deducting the cost of feed, which was the same in each case. Later, by the same means, the Michigan Experiment Station found that, after deducting cost of feed, cows returned from $6.18 to $94.05; the New Jersey Station showed, when milk was valued at $1 per hundred, a variation of from 13 cents to $49.72; and in Connecticut it was demonstrated that while the best cows returned $54.72, the poorest returned only $2.76 above the cost of feed. With such figures as these, supplemented meanwhile by similar results from the records of up-to-date individual dairymen and of test associations, it became evident that the dairyman who kept no records had but a poor show of succeeding in business in competition with the one who did. That many have taken the lesson to heart is shown by the fact that testing associations are steadily growing in numbers, and that more pure-bred sires have been introduced into Minnesota during the last three or four years than in all former years put together. A sire bred from a cow with the highest record is the most eagerly sought for the production of new herds. "Breed to the winner" seems to be the motto.

Prof. Grout points out, however, that the record is not the whole thing in determining the value of a sire. Just as the colt, which presumptively inherits "a wonderful burst of speed," may from inherited physical weakness fail to approach the record expected, so may the daughter of the most high-bred sire fail to approach in milk-production, the record of his dam.

By record-keeping and a careful weeding-out of unprofitable stock, combined with an equally careful selection of pure-bred sires, and good care, the average production of the Minnesota cow can be raised from 160 lbs. of butter to twice that amount. With a million cows, the latter figure would mean an addition to the dairy revenues of our state of from $30,000,000 to $40,000,000 a year. And the instrumentalities for attaining this result are so simple—the scales, the Babcock test and the suiting of the ration to the cow—that it seems hardly possible that many of our dairymen will be long content with any inferior system.—Condensed in part from address before the Northwestern Guernsey Breeders' Association by Prof. George P. Grout.—C. R. Barns, Extension Division, Minnesota Agricultural College.

FEEDING HORSES.

The following short hints on horse feeding, given by the Horse World, are intended not for the experienced, but in the hope that some owners who, with the best intentions, know nothing of the delicate organization of the interior economy of a horse, may be induced to pay more attention to the feeding of that useful animal, man's best friend. All probably know that a horse wants three meals a day, but are not careful of the proper interval of four to five hours between each meal. Few, for instance, know or care to know the time required for digestion,—namely, at least two hours for oats and three hours for hay—so that hay should be given in the evening when the day's work is over. The evening meal should be, of course, the most substantial, the work being over, there is ample time for rest and digestion, and for the renewal of exhausted tissue or muscle. Some horses are such shy feeders as to eat only at evening or night.

Feeding should be regular and the horse required to work as little as possible on a loaded stomach, and an interval of half an hour should elapse before food is given to a heated and tired animal. It is equally injurious to feed a horse too often, or too seldom, both being productive of the same result—namely, colic. The horse fed at too long intervals is apt to fret and knock about, eats too greedily when he gets the chance, and is apt to become a cribber. Food, then, should be given about every five hours, when the previous meal is digested, before charging the stomach again. But little food or water should be given during short stoppages, in order that both stomach and bladder may not be overcharged while at work. Most people know how a bucket of water will stop a race horse, but few think how the overcharged stomach affects the lungs of a horse when at work. A horse when fed while heated and out of breath cannot digest its food, and the result is diarrhoea, or, curiously enough, the extreme opposite in the form of colic or indigestion. Coleman's Rural.

JUDGMENT NECESSARY.

The farmer must use his judgment in balancing up rations. We have aimed to simply give the general principles. The details he must work out for himself. Suffice it to say that the cow can not do her full work if she is fed on alfalfa hay alone, for the reason there is too much flesh-forming and not enough carbohydrate material in this diet. Nor can one get the best work out of his cow on clover

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Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 225-227-229-231 East Sixth Street, Los Angeles.

hay alone, nor on silage alone. Bear in mind that the carbohydrate rations include all the straws, corn in every shape and form, sorghum, timothy and millet hay. Remember that the flesh-forming rations are alfalfa in any form, the clovers, bran, shorts, oil meal and cotton seed meal. If the farmer who is milking say ten cows will bear these facts in mind and will give the matter careful study, a little experience will enable him to ascertain what ration is best for his stock.

It seems to be a common impression that anyone can run a dairy, but this is a sad mistake, for it requires a business head to make a success at anything. It requires a man with tact and skill to milk properly. Cows should never be abused in any way, and should always be made comfortable. A dairyman cannot afford to have his cows neglected or abused, because it would be a direct loss to him. A cow will soon get to dislike a rough attendant. He makes her nervous and restless, and consequently she does not produce her best returns.

A dairyman should have some good, profitable cows, some that have good udders and four good teats each and that will produce over 5000 pounds of milk and 250 pounds of butter per cow per year.

Cows should be fed and milked regularly at the same hour each day. They should be well bedded and made entirely comfortable. Each cow should have the food that she relishes most and the kind that gives the best returns. Cows should be curried and kept perfectly clean, and should have salt and water at their disposal all the time. If a cow while under the above treatment does not produce more than 5000 pounds of milk and 300 pounds of butter annually, it is worth only about $30 to $40 cash. A cow making 400 pounds of butter is worth over twice as much, because a cow that makes 400 pounds of butter seldom eats any more food than one that makes 300 pounds, and it takes the same amount of care for each. Therefore, the extra 100 pounds would be clear profit. This illustrates the importance of keeping the individual records of the dairy herds.—Journal of Agriculture.

FLY REPELLANT.

A reader hands in the following recipe for making a fly repellant which is said to be effective: Resin, one and a half pounds; common soap, two cakes; fish oil, one-half pint; and water, three gallons. Dissolve the resin in one gallon of water, and the soap cut fine. When dissolved, add the fish oil and the remainder of the water. Stir thoroughly before using. Apply with syringe or brush. This is an excellent fly repellant, cheap and effective.—Kansas Farmer.

No Hoof-No Horse

Especially is the dry season in this section very hard on hoofs. If you have a horse with a bad foot caused by tender, brittle, hard or contracted hoofs, split hoofs, quarter cracks, mud fever, scratches, corns, cracked heels or grease heels, send 16 cents postage and we will send you a 50c package of ESHELMAN'S WOOL FAT HOOF HEALER, and if satisfactory, send us the 50 cents. If not, write us to that effect, and you need pay nothing. We take all the risk, you just try it. Send for it today, or send for folder with many testimonials of big horsemen, vets and others.

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HOW TO MAKE SCHMIERKASE.

Cottage cheese, sometimes called Dutch cheese or schmierkase, is made from skimmilk. A small amount of buttermilk may be added. To make cheese, allow the skimmilk to become sour and curdled. Heat it then to from 90 to 100 degrees F, in about thirty minutes. After reaching the desired temperature remove the vessel from the source of heat and leave the curd in the hot whey for about fifteen minutes. Remove the whey by pouring the heated clabber into a cheesecloth bag or on a draining rack (made out of wire screen with cheesecloth spread over it) and allow to drain until no more whey appears. The higher the temperature to which the clabber is heated, or at a like temperature, the longer the time of heating and the longer the curd remains in the hot whey, the harder and dryer the cheese will be. By regulating the time and temperature we can always produce cheese of the desired consistency.

The yield is about fifteen to twenty pounds from 100 pounds of skimmilk, and the price is about ten cents per pound. Before using or selling, the curd must be worked thoroughly and some salt and cream added. The amount of salt added depends upon the taste of the consumers, two ounces to each ten pounds of cheese is a medium amount. Adding cream greatly improves the flavor of cottage cheese, and since under ordinary conditions a pound of medium rich cream testing, say, 25 to 30 per cent fat, never would be worth more than ten cents, there is no danger of losing money by adding cream to cottage cheese. One pound of cream to ten pounds of cheese is a fair ration. In a cool place cottage cheese may be kept for several days. The softer the cheese the sooner it will spoil and sour. Always use good, clean skimmilk; do not let it become too sour.—Coleman's Rural.

THE GRANGE.

It is not difficult for the student of Grange history to explain the ever increasing prosperity of the order. Founded on principles of eternal truth, with an unstained record of over forty years, during which time it has fought the battles for agriculture by doing for the farmers of our land the things they most needed done, this record of achievement should challenge the attention of all intelligent farmers and interest them in Grange work, but when we add to this the willingness of organized capital and organized labor to sacrifice the rights of the farmer, and the utter disregard of some of our so-called statesmen to rural welfare, we find it dawning on all tillers of the soil that the Grange is their only salvation. The Grange grows because its officers, state and national, are real farmers, with the welfare of their fellow toilers at heart.

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LICE REMEDY.

Tobacco tea has been found to be an excellent remedy for lice on dairy cattle. Its preparation and application may be made as follows:

Take a pound plug of any brand of tobacco and boil it for two or three hours in two gallons of water. Then set it off and add two gallons of fresh water. Apply this liquid to the cow affected with lice, with a heavy horse brush. This rubs the medicine well under the hair. Those who have tried this preparation say that one or two applications are enough to destroy the worst case of lice in existence. The remedy is certainly a simple one and should be tested by those who have lice on their cattle. Young stock especially may receive the treatment with beneficial results.

A SHETLAND PONY FARM FOR CALIFORNIA.

W. T. Carr, an Illinois man, has purchased 774 acres of land in California, between Nelson and Chico, to use as a Shetland pony farm. Mr. Carr will commence immediately to prepare the ranch for the blooded stock, which he will take from the East. The purchase price of the land was in the neighborhood of $50 an acre, which includes a crop of growing wheat. The Shetland pony industry will be a comparatively new one to California. Heretofore this class of animals has been purchased in the East. The demand has been so great of recent years that Mr. Carr decided to establish a farm in California. After looking carefully over the state, he chose the land near Chico as the most suitable place.—Horse World.

The downward trend of pork prices has given rise to the belief on the part of some that lower prices may be expected this fall. No one can predict with certainty, but even if prices should fall lower than they now are it is very doubtful if any farmer can afford to continue his operations without hogs. What he needs to do, however, is to study ways and means by which pork production can be cheapened, and this is just as good a way to increase profits as is the securing of higher prices. The pig is about the only animal on which the farmer does not have to pay taxes. He comes into the world after the tax assessor has made his rounds, and is put on the market before he appears again. With plenty of good pasture, especially if it be alfalfa or clover, the farmer is in a position to reduce the cost of his pork production and still clean up a little profit in spite of lowering prices. —Kansas Farmer.

The calf that is to be raised on skim milk should be taught to eat grain early. When they have access to it, many of them begin eating grain at two weeks of age, or three at the latest. The grain should be placed in a box where they can easily get to it and they can be encouraged at first by placing a little in their mouths after they have consumed their milk. Grain can best be fed dry after the milk is fed. In no case should it be fed in the milk, as in that case it will be gulped down without chewing, which is bad for the digestion. After a calf begins to eat considerable, grain should not be kept before it. No more should be given than will be eaten up twice each day, which will not be over one-half pound daily for the first two months. After this they may have more, but it will not be necessary to feed more than one pound per day up to six months unless it is desired to push them rapidly.

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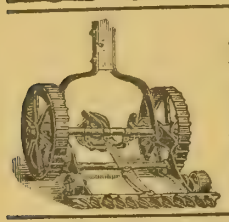

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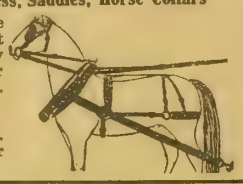

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Bees and Their Care

AMONG "AMATEUR" BEE KEEPERS

By J. G. Gilstrap.

We all make mistakes or have made them. Some years ago, about twenty, I was learning some of the ins and outs of modern beekeeping in Kings County, and had learned something of the different races of bees. Talking with a very egotistical man one day I alluded to the different races of bees and he very quickly informed me that there were but two races of honey bees, i. e., the common wild bee and the big black Italian bee; and if there were any others they were only crosses of these two parent stocks.

An acquaintance bee keeper was passing a farm house in this valley a few years ago when he was hailed by the owner of the place, who, by the way, was a horticultural commissioner of no mean repute, and the bee man was asked to stop and examine his bees, a few hives sitting in the yard. The owner said he thought they were diseased, foul brood or something, he knew not what. Taking the bee man to the affected hives he was shown several brood combs that were well supplied with pollen or bee bread. The joke was certainly on the horticultural commissioner.

Last year I was inspector of apiaries of Stanislaus county when I drove up where a couple of German boys lived who had the nucleus of an apiary. They had been raised in the large cities and had never seen bees till they purchased this place, a short time before my visit. As we looked through their bees they were eager for information in all lines of bee lore. Finally one of them asked me what that was in the combs that looked like worms. I told him they were the larvae, young brood not hatched. He burst into laughter saying the joke was on them. A few evenings before they had opened a hive and seen those worms. They thought they were maggots and they carried the combs to the house and picked out several hundred maggots.

A young man working on a farm near Modesto last year who had never looked into a bee hive before had been asked to see if he could get some honey out of the hives. He proceeded in the attempt and when three days later, as I came by the place to inspect the bees, the same young man took me to the hive and said he had taken a little honey from the one hive, but they had but little. He said that he cut out all the old comb that didn't have honey in it. Well, imagine my surprise to find six or seven combs of brood, all they had had, out on the ground and the empty frames in the hives. He thought those combs useless.

STARTING AN APIARY WITH SMALL MEANS.

By W. H. Allen, Santa Paula, Before the State Bee Keepers Convention.

My subject is, "How can a man with small means start in the bee business." I hear some say, "It can't be done." I say it can. I have done it and what I have done, others can do, if they follow my instructions.

In the first place I will ask you to strain your credit to buy one hundred hives. I will not say what kind, as every one has his choice. I should get the Ventura Standard—this is a nine-frame hive and can be bought at the factory for $1.35, and consists of two bodies, one bottom board, one top and seventeen frames, Langstroth length. You get these in the flat and can nail them together yourself on rainy days. You see your hives will cost you $135; but I am going to ask you to get a little further in debt. It will take 112½ pounds of foundation to fill your frames. The foundation will cost you about 45 cents a pound and this will make your hives cost you $1.85 apiece or $185.62½ for the hundred hives.

Place hives where you want them to stand—be sure to have them perfectly level sideways and lengthways. Have the back about one inch the highest. This gives the bees a better chance to clean the hive and keeps the rain from running in at the front.

You now have the hives and we will go after the bees to fill them. Get some boxes about the size of, or a little larger than a single beehive. The more boxes the better, and the sooner you will get your hives filled. Be sure there are no holes or cracks in the boxes, except for the bees to go in, for they like a tight hive and will spend a lot of time glueing up a hole or crack, that they ought to put in at something else.

Now take your boxes up some of the many canyons that we find in California, set them up in a tree or on a cliff or rock and when you find a big live oak tree don't hesitate to put several in it. I have taken five out of the same tree several times. If you have a friend in the valley who will let you put some in his apricot orchard, they will be certain to catch bees, and be sure to have boxes out by the first of March.

You should find bees in some of the boxes by the middle of March; stop up the box so the bees cannot get out and put another box in place of the one you have the bees in. Always take empty boxes with you.

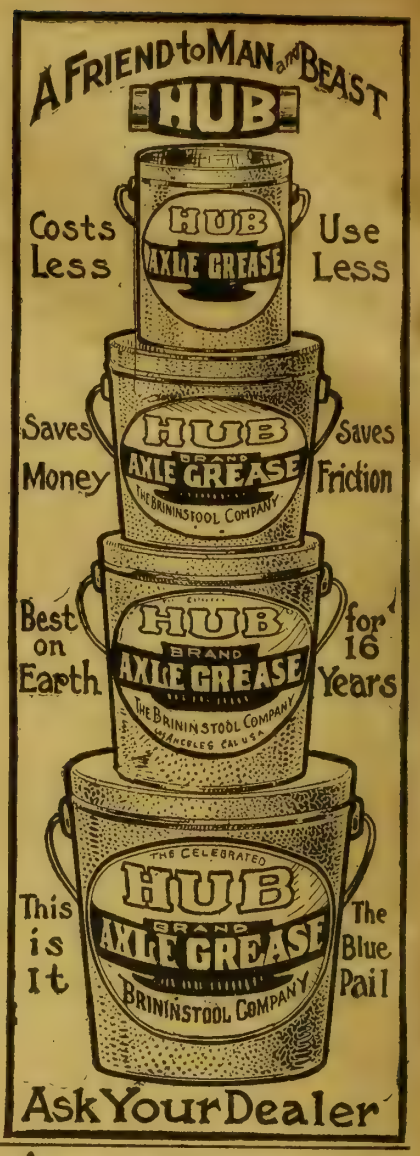
When you have been to all your boxes, take those with bees to the hives. Open a box and dump the bees in front of a hive and see the little fellows scamper in the hive and go to work on the foundation.

After the fifteenth of March you should go to the boxes once a week and you will always find bees in some of them. Go often so they will not have time to build much comb in the box. Now if you put out fifty boxes and look after them regularly until the last of May, if you don't have enough bees to fill your hundred hives, I will be fooled.

I have caught over one hundred swarms in a season and only had out about 25 boxes. I always kept extra empty boxes with me to put in place of the ones I brought home.

Now you have your hives full of bees and must find some way to pay for the hives. Some of the first swarms you have caught will be very large and in a short time they will have all their combs drawn out and filled with brood and honey and ready for a super.

My plan has been to use my regular super put in section holders and fill with sections. It will hold 56 sections, two deep. I have had swarms I brought from the trees make two of these supers full, 112 pounds, while some of the smaller swarms did not make anything at all, but I think you would be sure to get two tons of comb honey from your hundred hives. You can sell for ten cents a pound. I have always received 12½ cents or 15 cents for mine; but say ten cents, there will be $400, enough to pay expenses and have something left and your bees will be worth at least $400.



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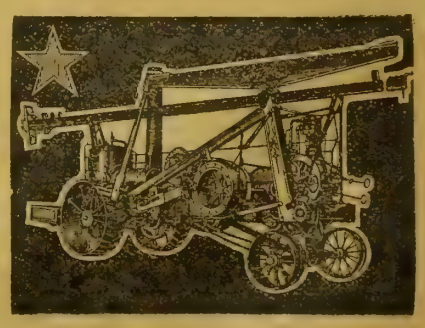

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The cantaloupe fiesta at Brawley July 4th was a great success.

General Agriculture

HIGHWAY BUILDING AND MAINTENANCE.

Maintenance of highways is the vital essential which accompanies the improvement of roads, which fact the National Good Roads Board of the American Automobile Association desires to impress upon the highway authorities of the entire country. There is nothing new in the proposition except that its thorough comprehension will save thousands of dollars to those states which come to an immediate realization of the fact before proceeding with the expenditure of the millions of dollars recently appropriated by many legislatures.

France is looked upon as a nation of road builders, and its highway system has long been considered a model to be followed by other countries, hence the National Good Roads Board has been lately devoting much attention to the situation there, brought about by the increased volume of road traffic caused by the advent of the automobile. No man has toured over more miles of European roads than Francis Miltoun Mansfield, the American consul at Toulon, who is now on a leave of absence in this country.

"That French roads are the best, taking them collectively," asserts Mr. Mansfield, "there is no doubt. But it is true that these highways are not standing up to the new travel conditions in regions where there is an abnormal increase over the slow-going horse-drawn traffic period. An appropriation hitherto spread over a stretch of road traveled by a hundred vehicles a day will not suffice that which is used by five hundred, even though four hundred be of the rubber-shod variety and do not of themselves tear up the roads. Narrow iron tires and the caulks of horseshoes together work the damage, and until new systems of road building can be inaugurated there must be an exceedingly intelligent distribution of expenditure so as to deal with the question of upkeep at busy corners, both in town and country, so that there will not be a shortage and the surface will be in a normally good condition continuously.

"The good roads question in France is national, dependent entirely upon the making or remaking of national highways of the first, second or third class, and it is to be noted that a route nationale in France is still a national road, and its upkeep is at the charge of the nation, even though it ambles for miles through the heart of some busy city like Lyons or Marseilles. The roads question, then, is one dealing with roads, and not streets, and in this connection, though one-third of all the registration of motor vehicles in France is confined to Paris and the neighboring communes, fifty odd thousand automobiles running up and down the main roads of France make this national care of roads a necessity, as is the national policing of the open country. Nothing in that paternal land is left to local control where the public good of the entire population is concerned.

"This is the French policy, and the pattern upon which all other national road building governments of the Old World are founded. Italy, less consistent in its policy, works on the same lines, and fails only when the local officials of a province are not up to the standard of efficiency of their neighbors. Such a state of affairs in France is hardly conceivable. Take the case of a new country like Algeria and Tunisia, as French as France itself, though the Mediterranean separates them from the mother country. Here the national spirit prevails, and the national roads are good roads. This is so even in Madagascar. French again!

"To come nearer home, or at least nearer to our understanding, roads control in England produces results quite analogous to those in our own country, except that when all is said and done the upkeep of England's roads is, at its best, of superlative excellence. They, with comparatively short stretches to deal with, likewise a circumscribed area, find this thing possible where another more unwieldy prospect could not thus be handled. New York and Pennsylvania, with an automobile registration in excess of 100,000, show double the number of motor vehicles of France, while their combined area is approximately the same. Again, referring to conditions in England, the famous Bath road from London to the celebrated spa, over which rolled the stage coaches of the days of Beau Brummel, a distance of 112 miles, is under the jurisdiction of sixteen separate corporations. As to surface it is a thoroughly good road, but each bailiwick seemingly has its own ideas as to methods, and thus it is that the cost of road building varies greatly, not only in the amount of the bill rendered, but in actual durability of results, and now Britain is asking for a national plan of maintenance.

"We in America have much to learn. We should build for all time, and we should build intelligently, neither sparing reasonable exepnse at the outset nor neglecting the very important question of upkeep, once we have laid down the general lines. We, too, are a new country, and if a wilderness like Algeria can be made to blossom with good roads, it is not impossible for Virginia and Arizona to do the same."

PLANT FLAX.

Some years ago, in southern and central Minnesota, flax was grown in such abundance as to make this state the foremost in the Union in the production of seed. The crop was a very profitable one, too. But the "wilt" appeared; the land became, as it was said, "flax-sick;" and all attempts to cultivate it longer brought such disappointments that flax was reluctantly wiped from the list of the farmers' available resources. The same experience was repeated in other parts of the state as their lands were successively devoted to flax.

But experience has demonstrated that in from five to seven years the "wilt" disappears from the soil it has infected, and that then it can be again planted with flax, with the assurance of a crop as good—other conditions being equal—as in "old times." The price of seed is now so high, and the demand so large, that the farmer who prior to 1904 raised flax with profit can now very profitably again devote a portion of his land to it. In European countries, the "wilt" is circumvented, and a regular supply of flax insured, by giving that crop a place in a seven-year rotation. Under such a system the crop is as certain as any other. The plan may well commend itself to the consideration of farmers.—C. R. Barns, Minnesota University Farm.

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This is the strongest plow on the market. Can be had with straight or offset standard, and has one piece land side. Nothing but hard plow steel is used in the Standard Shin Landside and point. Point and Shin are reversible. We guarantee this plow to do satisfactory work in any beet section.

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ALFALFA WEEVIL.

In the issue of The Cultivator of February 16th appeared an article on the alfalfa weevil, calling attention to the energetic work and the quarantine regulations of the commissioner of horticulture of Arizona. Since then the California horticultural commissioner has taken up the matter very energetically and has instructed the quarantine guardians of the state to keep closest watch for this pest, especially along the lines of travel from Utah. So far the ravages of the weevil have been confined to a comparatively small section of that state, but every month the area grows, and more than 100 square miles has been added to the infested section during the last few months. Commissioner Jeffrey has written to the quarantine officers:

"I wish to call your attention to the danger of allowing it to become established in this state and the necessity of keeping a careful lookout in this respect along the railroad tracks on any alfalfa plants that may be growing there or in the fields adjoining, for signs of this pest.

"This is one of the hardest insects to quarantine against, as it would rarely be imported in seed and would be in the adult or pupal forms. It is, however, necessary to inspect seed carefully for any stray pupa or adult.

"It spreads in the adult form chiefly through being carried on railroad trains and any other convenient means of transportation.

"We should by no means allow alfalfa hay to come in from Utah. Our fields must be carefully watched for signs of this insect, and any beetle of a suspicious nature should be sent to the State Insectary, Capitol Park, Sacramento, at once for identification."

The next issue of The Cultivator will give extended quotations from the latest government bulletin on this subject, with illustrations of the pest.

NEIGHBORHOOD EXPERIMENT STATIONS.

In his address before the Claremont Pomological Club at Pomona Saturday, Prof. C. B. Lipman made a strong point of self reliance on the part of the fruit grower and the conducting of a series of experiments to inform himself as to conditions and requirements of his own soil. The university is receiving every day requests for information as to specific cases; in fact, we may say that to this office queries come every day as to methods of fertilizing particular crops on certain soils in a certain section. To answer such questions with any degree of exactness is impossible. Even after applying soil analysis, there are other factors to be taken into consideration which should govern the handling of a certain soil for a certain crop. Prof. Lipman's suggestion was that a corner of an orchard be set aside and that certain methods of manuring and applying complete commercial fertilizer be followed, not only one year, but for a period of years. Nothing is to be lost by such experimental work and a very valuable lesson may be gained.

More extended reference to Prof. Lipman's talk will be given in next week's paper.

MADE THE BEST OF AN EVIL.

On another page is an article on ridding the orange groves of Florida of the rust mite. We quote this from a Florida paper because of the fact that the time was, and still is with a few, when the so-called "russet" orange of Florida was considered the sweetest orange grown. A question recently came to the Cultivator as to whether the "russet" orange could be secured and planted in California.

The rust caused by these little insects was at the very first thought to be objectionable, but someone, doubtless an ingenious Yankee, who had gone to Florida to raise oranges, thought of the idea of claiming superiority for these defective fruits. This succeeded so well that for a time "russets" commanded increased prices. The fad is now past and the question is how to rid the trees of the pest.

REORGANIZING.

State Horticultural Commissioner Jeffrey has made several material changes in the personnel of his office. Mr. Stephen Strong, formerly deputy county horticultural commissioner of Los Angeles county, has been made quarantine guardian in charge of Southern California. Mr. Strong will personally watch the introduction of plants and fruits at the port of San Pedro, and another guardian under him will have charge of the port of San Diego. Mr. Strong will have direction of the county horticultural commissioners acting as state quarantine guardians by virtue of their offices.

Another change in the state office is the transferring of Mr. O. E. Bremner, formerly secretary of the commissioner, to the office of chief quarantine officer at the port of San Francisco. This is the office formerly filled by Mr. Dudley Moulton, who has retired.

SHORT COURSES.

The University of California is sending out announcements for the farmer's short courses for 1911. These begin with a general agricultural course of two weeks on October 2nd; also on the same date with dairy manufacture and poultry husbandry. Others to follow are rural education, household economics, dairy farming, animal industry, veterinary science, horticulture, viticulture and entomology. Circular No. 64, giving particulars as to the courses, may be had by addressing Principal, University Farm School, Davis. Railways will give reduced rates to attendants at the school.

PROBLEM OF THE CHILD.

"The Moral Problem of the Child" is the name of a booklet written by Mrs. Woodallen Chapman. It is a small 25 cent book dealing with the best method of informing children of those things in their lives which are kept from them, often to their injury. It may be had by addressing the author at 651 West 179th street, New York.

The Bureau of Soils of the Department of Agriculture reports that several hundred samples of soils are received annually. The bureau has from its soil service fairly complete information of most sections of the United States, and especially of California, and can give explicit information. It is seldom that the samples are given complete analysis. We doubt not much information may be had by keeping in touch with this valuable factor in the department.

Commissioner Beers of Santa Barbara County reports the cherry crop of the Lompoc Valley as being exceedingly heavy this year. He says, "The trees are a mass of delicious fruit, very large, finely ripened and of delicious quality."

Without doubt there will be a fierce fight on the present lemon tariff. Importers have supplied from their own pockets and those of the Italian lemon growers an immense fund to try and batter down the cent and a half protection. They are appealing to the prejudice of the East through high prices which have "deprived sick women and children" of the healthful lemon during the fearful heat of the last few weeks. If California is to produce lemons to supply those who see fit to live in the sweltering East, there must be some little encouragement to put the industry on its feet. The high prices which have been obtained for California lemons during the heated spell are the result of shortage of supply. If encouragement can be given to increase this supply to meet the needs of the nation, there will be less suffering on the part of those whom the importers are trying to use to create sympathy against the lemon grower.

Honey producers are pleased at the year's flow, which is even better than anticipated early in the season, and the prices are satisfactory. Mr. Mendleson, of Ventura county, reports from the Colorado association that the crop of that section will be very short. Mr. Shaffner, secretary of the California Bee Keepers' Association, reports the general prices prevailing at this writing: water white 8 cents, white 7½ cents, light amber 7 cents. The Andrews apiaries at Corona report a possible output of forty tons. It is to be hoped magnificent returns will be secured by California apiarists this year to make up in part for the losses of last season.

The next session of the Dry Farming Congress, which will be held at Colorado Springs October 16 to 20, will discuss one proposition which should lead to more than discussion. That question is the harmonizing of agricultural laws in the various states. The unification and simplification of all these laws will certainly lead to the advancement of agriculture. A committee is to be named which will endeavor to accomplish some progress which it will report before the next meeting of the congress.

The Crop Reporting Board sent out information the first of July that the general condition of crops was very satisfactory, for example, cotton showed 88.2 per cent of normal. This was better than on the same date in 1910. Corn at that time was likewise in a satisfactory condition, but general report has it that the drouth and heat of the past few days have materially lowered the crop conditions.

A complete report of last spring's demonstration train campaign shows that over 76,236 California farmers attended the lectures. This was a material increase over the preceding year. The mileage covered was 4000. The train was out seventy-six days and held 225 meetings. While the same towns were visited as the preceding two years, the increase was pronounced.

Despatches in the daily papers chronicle the sale of the Jersey bull Noble of Oaklands at a sale at Coopersburg, Pa., for $15,000. This is declared to be the highest price ever paid for a single Jersey. The cow which produced this animal also sold for the long price of $7000.

Heavy rains have greatly injured the bean crop near Lewiston, Idaho.

Agricultural News Notes of the Pacific Coast

Northern California

Cherry picking is finished in Sonoma County.

Sheep inspectors of Sutter County report no scabies within its boundaries.

At the Ukiah wool sale, a few small lots changed hands on a 15 to 16 cent basis.

The comys fusca is doing good work on brown apricot scale of Sonoma County.

The Gravenstein Apple Show at Sebastopol will be held this year, August 14 to 19.

Owing to the cool season, hops are reported much more backward than last year.

Ukiah claims a $50,000 egg output. The poultry association there has a membership of thirty.

One of the premiums at the coming State Fair will be $250 in gold for the best gasoline traction engine.

A great many caprifigs containing blastophaga are being distributed from the Maslin orchard at Loomis, Placer County.

Yolo, Colusa, Glenn and Tehama Counties are planning to combine to make an exhibit at the Panama-Pacific Exposition.

Sutter County will plant more extensively of Thompson Seedless grapes another season than for several years.

"No Johnson grass allowed to go to seed in this county," is the slogan of Horticultural Commissioner Galloway of Sonoma.

Fruit growers of Vacaville are hoping to replace Japanese labor with Mexican, which they are finding more satisfactory.

Secretary Andreason announces that the dairies of the state must clean up and conform to the provisions of the Martinelli dairy law.

F. H. Bolster, formerly in charge of Gardena agricultural high school, will teach botany at the State University Farm this year.

Thirty acres of standing grain, two stacks, a header and other valuable property was destroyed by a field fire at Oroville, Butte County last week.

The management of the State Fair, which is to be held in Sacramento August 26 to September 2, announces the biggest and best state fair ever in the state.

County Horticultural Commissioner Galloway of Sonoma County says that but very few eggs of the codling moth have been observed during the last few weeks.

The Sutter Almond Growers Association recently held a meeting at Yuba City, at which Manager Dargitz of the California Almond Growers Exchange made an address.

The wool sale recently announced for Cloverdale, Sonoma County, was called off because of the few offerings occasioned by the low prices offered. Fourteen and fifteen cents did not look good to the producers.

Articles of incorporation of the Santa Rosa Pultry Association and Egg Exchange have been filed at Santa Rosa. The incorporators are John J. Fitzgerald, Max Fischer, Andrew McDonald, H. J. Wright and W. E. Pietsch, the latter of Oakland.

Central California

Dinuba is now forwarding eight cars of watermelons daily.

Raisin growers are holding for 4½ to 5 cents for the new crop.

A German potato grower cleared over $200 from one half acre.

Farmers at Madera are developing much water for irrigation by pumping.

The cannery at Hanford, Kings County, started on peaches July 10th.

Fresno County is delivering standard varieties of peaches to the canners.

Potato growers over the valley are elated over the present condition of the market.

Portions of Tulare County are infested with what is called the Arizona thistle.

Porterville reports oranges rapidly sizing and that the usual June drop did not occur.

Dinuba, Tulare County, claims to be the banner watermelon producing section of the state.

Exeter has forwarded sixteen cars of deciduous fruits; some of them topped the market.

Contracts have been signed for the construction of a packing house at Worth, near Porterville.

Lindcove, Tulare County, has already had a serious field fire, over 400 acres being burned over.

The squirrel inspector of Kings County reports a good showing on squirrel eradication work.

Pajaro Valley apple growers are still discussing a more desirable co-operative marketing organization.

The state veterinarian recently delivered an address to the dairymen of Visalia on tuberculin testing.

The Watsonville Poultry Association is making an exhibit at the Santa Cruz show, which is on this week.

A Portuguese dairyman near Goshen has been on the carpet and paid a $15 fine because of uncleanly conditions.

Agents of the Department of Agriculture are making investigations as to irrigation pumping plants of Fresno County.

A farmer at Visalia recently lost his life by his clothes being caught in a barbed wire fence while he was fighting a field fire.

The gauge on the Kings River near Red Mountain showed the maximum flow of the river on June 18 to be 23,282 second-feet.

A pest of grasshoppers near Hanford is claimed to have been wiped out by flocks of millions of blackbirds which feasted upon them.

The new crop of dried apricots is being delivered, and Fresno reports the shortage so great that but very few car lots will be sent out.

The cool weather which has prevailed most of the season is responsible for the slow ripening of fruit and Madera reports crops more than ten days later than last year.

A mass meeting was held at Stockton recently to discuss the matter of securing an appropriation of $100,000 for the opening of Mokelumne River for navigation between Taison and Woodbridge.

Southern California

A freak shower fell in certain parts of Southern California last week.

County Bee Inspector Wagner of Imperial reports a fine flow of honey.

An abundance of water for irrigation has been found in wells at Fallbrook.

The Escondido Poultry Association will hold its first annual show December 6-8.

Southern California Arboricultural Association held a meeting at Pomona last week.

Two orange packing houses were burned at Arlington, Riverside County, last week.

The Lemon Men's Club of Southern California held a session in San Dimas last week.

Grape growers of San Diego County are exasperated at the destruction by rabbits and quail.

The walnut crop at Garden Grove, Orange County, has shown but little blight, and the output promises big.

The meeting of Lima Bean Growers at Ventura last Saturday resulted in adding over 40,000 bags to the pool.

The Corona Foothill Lemon Company, recently incorporated for $300,000, has elected S. B. Hampton president.

An expert of the Department of Agriculture is investigating the squirrel situation at Santa Maria, Santa Barbara County.

The Lima Bean Growers Association of Ventura County estimates that there are only in hand about 35,000 bags hold over beans.

Huntington Beach sugar beet growers celebrated the Fourth of July by the dedication of the great sugar factory just constructed there.

The citrus fruits of Pomona, Los Angeles County, brought to that rich section in excess of four million dollars for its 4,500 cars of fruit.

The shipments of cantaloupes from the Imperial Valley considerably exceed the 2,500 car mark which was the estimate of the earlier season.

Escondido, San Diego County, which is becoming famous for its table grapes, finds the season will be much more backward than last year.

The cannery at Hemet, Riverside County, began operations last week turning out 15,000 cans daily. The cannery will handle 500 tons of cots.

The Imperial Valley has never been considered especially strong on watermelons, but one firm at Brawley has shipped fifty cars of fourteen tons each.

The Oxnard sugar factory's campaign began on Monday, July 17th. Extensive improvements have been made in both the factory and the beet dumps.

A consignment of Mexican mangoes was destroyed at the port of San Diego by the State Horticultural Deputy Commissioner because they showed evidence of being worm infested.

The law enacted by the last legislature preventing the destroying of rabbits by "rabbit drives" has compelled orchardists of Escondido, San Diego County, to construct thousands of feet of rabbit proof fencing.

The Coast

Springfield, Oregon, is calling for rain.

Eggs at Tacoma, Washington, are selling at 24 cents.

A fruit fair is being planned for Coeur d'Alene, Idaho.

Timothy hay is practically all cut at Outlook, Washington.

The census shows Idaho's hogs to average in value $10.50.

Apricots are beginning ripening at Wenatchee, Washington.

The Spokane Valley is beginning the harvesting of winter wheat.

The earliest ripening wheat is being harvested at the Dalles, Oregon.

The first car of apples out of North Yakima, Washington, was shipped on July 8.

The watermelon crop near Kennewick, Washington, promises to be immense.

Farmers near Lamona, Washington, are making a fight against "Jim Hill" mustard.

A forestry station is being established at Zamboanga, Mindanao, Philippine Islands.

---y producers at Cashmere, Washington, suffered heavy losses because of rains about the end of June.

A piece of ambergris worth over $150,000 was recently taken from a whale killed near Victoria, B. C.

Spokane, Wash., depends upon California for its early potatoes, two cars being received one day recently.

Sixty thousand head of sheep are being pastured in the Columbia forest near the White Salmon country, Washington.

Late rains of the Northwest have given assurance that there will be no such loss from forest fires as obtained last fall.

Nearly 500,000 pounds of wool were offered at the sale at Baker, Oregon, July 8. The price obtained was about 15 cents.

Wheat ranchers at Pullman, Washington, do not think they will begin the harvesting of winter wheat until August 1.

Forty thousand acres of land near Moses Lake, Eastern Washington, will soon be placed under the ditch and given over to fruit culture.

Drainage District No. 1 in Klickitat County, Washington, will construct a canal for draining and reclaiming its lands. It will cost about $85,000.

The Y. M. C. A. of Portland, Oregon, is holding an exhibit of garden truck produced by boys who are studying agriculture under that institution.

Phoenix, Ariz., was given a heavy rain storm July 1. It was reported to be the heaviest ever fallen in that section since the establishment of the Weather Bureau.

The British Columbia Fruit Growers Association, which will meet in Victoria in August, will be addressed on irrigation by Prof. Etchervery of the California University.

Melon growers at Clinton, Colo., have found that pruning of cantaloupe vines has aided in forcing earlier ripening. Some growers maintain that the time is shortened two weeks.

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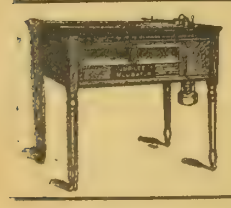

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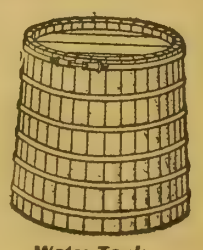

Water Tank

Profit in the Poultry Yard

Practical poultry people who may have ideas from their experience as to methods of feeding and housing and general care of poultry will convey a favor upon the Cultivator and its circle of readers by sending in concise accounts. Mrs. Basley is always willing to answer queries which with the experience of others should make this a most valuable feature in poultry life on the Coast. Opinions or matters of a personal nature should be omitted, but a concise statement of facts is always valuable.

GOOD MARKET EGGS.

There is a growing sentiment among some farmers and egg buyers for the production of better eggs for the market. The buyers demand better eggs than they have been receiving, and some farmers desire a better price for their good eggs. To produce these better eggs, the farmer should have a thorough knowledge of conditions that may affect production. The egg is manufactured by the hen from the food that is consumed, hence her feeding should be carefully considered.

No ration should be made up wholly of grain, but it should contain with the grain a mixture of bran, shorts and beef scraps or skim milk. The grain should be fed in a deep litter to induce exercise. Green food of some kind, grit and oyster shells should always be handy for the fowls. The number of eggs produced will depend largely on the breed used, the ration fed, the congeniality of surroundings, and the care given. If any of these things mentioned be omitted, the number of eggs produced will be decreased. A male bird is not necessary for the production of eggs, hence should be removed from the flock at the end of each breeding season, in order to insure infertile eggs. Infertile eggs keep better and are very desirable upon the market.

Farmers should look well to their flocks when considering the question of egg production, and select large hens of the breed which they keep, culling out and disposing of all undersized birds. By this means they will be able to obtain eggs of desirable size.

All people do not agree on the definition of a good egg, and even some do not realize the conditions that sometimes affect its quality. In order to meet any demand for first class eggs, the eggs should weigh one and one-half pounds to the dozen, be uniform in size, naturally clean, not washed, strong shelled, and fresh.

A fresh egg is one that was laid by a healthy hen, is only a few days old, and has been kept in desirable surroundings. A fresh egg is not one that was allowed to stay in the nest for a day or two, until it became convenient to gather it, or was taken from a stolen nest or an incubator, or from under a setting hen.

Age causes an egg to become stale and shrunken, and it can never be classed as a fresh egg. Heat seriously affects the quality of eggs, and in warm weather they should be gathered daily, and marketed as often as possible. Moisture causes molds to develop and quickly changes the quality of the egg. Muddy weather means dirty nests, consequently dirty eggs. Nests built on the walls of barns and hen houses are often used as roosting places, causing filth to accumulate, resulting in dirty eggs. Dirty eggs must be handled as second grades; washed eggs are just as bad. Eggs deteriorate in quality if they are left behind the kitchen stove or are stored in damp or musty cellars.

It is not desirable to keep eggs any length of time before marketing, although it sometimes becomes necessary to do so. When it is necessary to keep eggs, a cool, dry cellar should be used, and the eggs should be kept in some receptacle, such as an egg case, that will prevent them becoming broken or stained. Such eggs should be marketed as soon as possible. Only eggs that are properly handled can be accepted by egg buyers as first class stock.—A. G. Philips, Purdue University.

TO JUDGE AGE OF FOWLS.

In the case of a pullet, the surface under the wings will always be found interspersed with minute rose colored veins, which are totally absent in birds that are more than twelve months old. Again, there will be found, with pullets, a fair supply of long, silky hairs, which disappear directly the first moult is concluded. In the adult hen the skin will be found to be perfectly white, and free from either veins or hairs; hence it is easy, at a single glance, to estimate correctly whether a bird is under or over the age that acts as a line of demarcation between juvenile and adult stock. Additional evidence is forthcoming in the formation of the pelvic bones, which in a pullet are much closer than in the hen that has passed the pullet age. At two years they are much wider than at one year, so that birds at this age can be readily distinguished from those of say fifteen and eighteen months. The third point of difference is observable in the shanks and claws. In the young bird the skin of the claw is supple, and the scales are thin and brilliant. The skin gets coarser and harder as the bird grows, and the nail of the first toe, which does most of the work, gets much worn. There is also a difference in the eyelids. These acquire wrinkles as the bird gets older, and there is also a slightly shrivelled look on the face. This, with age, becomes more and more pronounced. Lastly, there is the question of wing feathers—the most infallible test of all. At the conclusion of the first complete moult, which takes place when the fowl is exactly twelve months old, the secondaries alter in shape, and bear indisputable evidence as to the dividing line having been crossed. Although the surest test of all, this latter can only be ascertained by those well versed in handling feathered stock.—Farmer and Grazier.

TO CATCH CHICKEN THIEVES.

We have occasionally lost chickens through rat depredations, and we have to keep up a continuous warfare on the rat tribe, and can manage to keep this pest in check, although never to keep them exterminated, since kind neighbors who breed rats for free distribution are always ready to furnish us a new supply when we think ours has entirely run out. Perhaps it is easier to guard our fowls from being carried off by two legged marauders than to guard young chickens, or more largely our poultry feeds, etc., from rat depredations. Perhaps a good watch dog or two will keep human chicken thieves away, just as a really good cat will keep the premises free from rats and mice, or even better. But it costs to feed dogs, and often

they are a nuisance on the premises and in the neighborhood. A burglar alarm is cheap, and usually very effective, at least if properly connected by means of underground wires with a bell in the bedroom. One of our neighbors recently caught one of those professional night operators in his chicken house one dark night and landed him safely behind the iron bars. This chicken thief was not given another chance to be out nights for the best part of a year, but was given free board and lodging during that time. The burglar alarm is a good thing. Thieves may poison or otherwise silence a watch dog. If the wires are properly placed, the unwelcome visitor cannot silence the burglar alarm. —Ex.

BUYING STOCK AND EGGS.

There is too much indiscrimination in purchasing either stock or eggs unless one has a specific purpose in view. The amateur, generally carried away by enthusiasm to outdo the other fellow or make a phenomenal success the first year, will defeat the very object he has in view by random buying. There is no excuse for this with all the state experimental stations and poultry journals at his disposal, which, if he would consult them, serve as bureaus of information in any branch of the poultry business in which he wishes to embark.

Now suppose a man wishes to go in for broilers. He must have his eyes on a heavy breed which produces an ideal carcass; if for eggs for market, a lighter breed would have to be selected and the market as to color of eggs consulted, and if for the show room any breed that strikes his fancy will do. Generally a comparatively new breed would be better, and grow up with it, as it is hard to compete with the old breeders who have been at it for years. In either case the breed must be thoroughbred. But how to get there is the rub, for the reasons that there are so many unscrupulous "jobbers" in the business who have never raised a bird, yet advertise themselves as breeders and date their career as far back as the Revolutionary war. They buy and sell eggs and stock for what there is in it. Greed is placed above principle. A neighbor got bit a few weeks ago. Two fertile eggs out of 50 eggs and not a chick. Beware of them.

If the amateur happens to live near an honest breeder or knows of one, the problem is solved. He can buy of him and study his ways and all will be right. The trade is full of sharks. I know of one in our neighborhood who lost half of his stock by roup, and is still at the old stand, selling eggs and stock. I know of another breeder who advertises his stock as prize winners. No sensible man would buy of him if he saw the unsanitary conditions and uncongenial environments which surround his yards.—The Feather.

TO KILL LICE ON TURKEYS.

The selection of proper remedies for poultry diseases and troubles will always be an important problem in poultry-raising. A subscriber in Indiana asks for information about dipping young turkeys in a solution of some of the lice-destroying compounds. My experience along that line was disastrous. We tried several kinds and strengths with the result that the young turks invariably expired soon after the lice. We decided that young turkeys were too valuable to waste in dipping experiments, so we quit dipping.

About four good dustings with Persian insect powder, or buhach, as some call it, generally settled the lice question. The powder was applied three days apart, and the job was thoroughly done. We would pour a lot of the powder on a newspaper, and while one held the bird another rubbed the powder well in among the feathers, especial attention being paid to the head and neck and under parts of the wings and body. A single large louse fastened on the head or under the throat of a young turkey will kill it. A drop of oil rubbed on these spots will kill them. After killing the lice keep the young turks away from lousy quarters and from other fowls.

Many people do a thorough job in destroying the lice, but immediately undo it by returning the turks to lousy quarters. Others destroy the lice in the houses and coops, but neglect to get those on the birds. While one is about it, he should make a thorough and clean job.—Farm and Fireside.

FEEDING COOPS.

When we get a large number of chicks on one plot of ground of differing sizes there is apt to be a great deal of trouble at feeding time by the big ones trampling the little ones and getting more than their share of the feed. To remedy this provide one or more slatted feeding coops. Arrange the slats so only the tiniest chicks can get through to the inside. Make another admitting a larger size, etc. Now feed the tiniest ones first, inside their coop; then the next size and so on till the job is done. The reason for this, you will readily see, is that if you feed the largest ones first the little ones will slide in along with them and be trampled upon, while if they get their food first they will be busy when the large ones are feeding. These coops should be moved to fresh ground often to insure a clean surface to feed upon. No chick can thrive that is being constantly tramped upon and these little coops are inexpensive, saving the price of themselves in a single season.—Farmer and Breeder.

RHODE ISLAND REDS.

Breeders of the Rhode Island Reds will be interested in the instructive and beautifully illustrated book on this breed recently published by the Reliable Poultry Journal. It gives the history and origin of the Reds, tells how to select and mate both for exhibition and utility qualities, how to judge by comparison and score card, illustrating the Drevenstedt comparison card, and covers all subjects pertaining to their successful breeding.

The book was edited by D. E. Hale, judge and breeder, and the contributors of articles are the leading breeders and judges of the country. Fully illustrated by Messrs. Sewell, Schilling and Burgess. The text and illustrations conform to present standard requirements.

"Rhode Island Reds" contains 30 pages printed on first-class paper with heavy paper cover. A color plate of feathers by Sewell. Price 75 cents postpaid.

Diarrhoea, bowel trouble, leg weakness, eating one another's toes and like disorders would not occur if the chicks had the opportunity to exercise in the open air on the ground every day, were properly fed, and had green food in reasonable quantities. The main causes of diarrhoea in young chicks are exposure to heat, to damp, or cold; irregular feeding of mash, wet food, or feeding too much green food, following none at all, and beef scrap unfit for them to eat, or anything that will ferment or sour in their crops.

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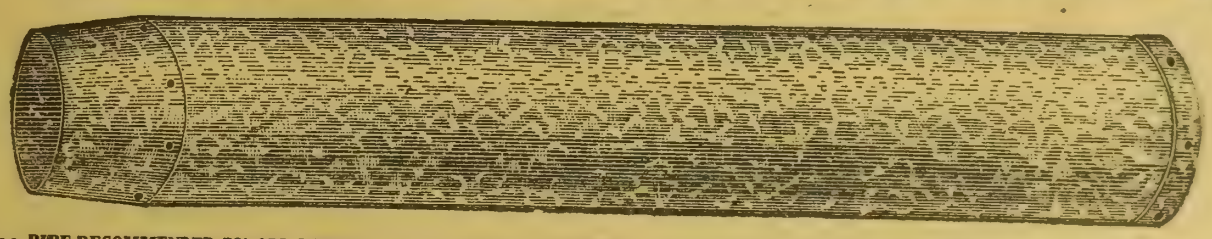

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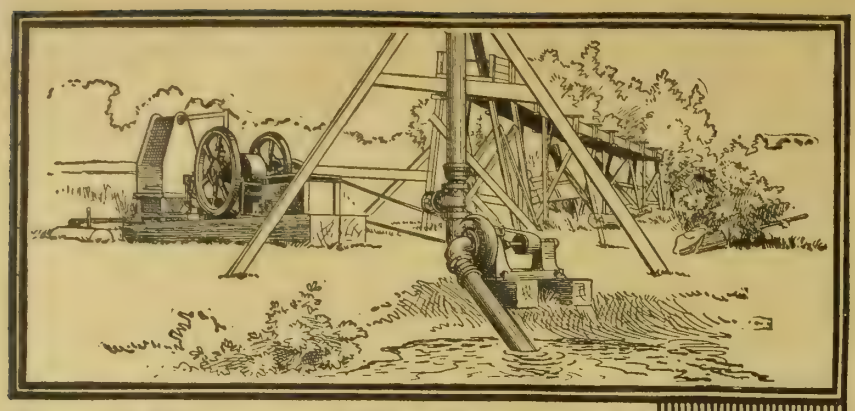

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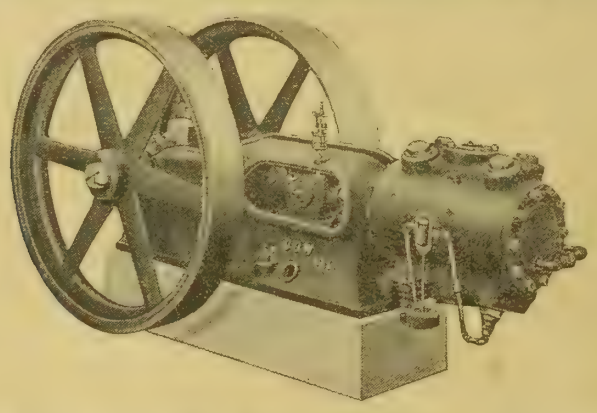

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Irrigation and Forestry

WHEN THE PUMP PUMPS AIR.

By W. E. Hind.

There are verses by the thousand set to music, prose and rhyme,
Of men on land and water, in every state and clime,
Who have faced the brunt of battle, mingled with the shot and shell
And oft with scars of glory dashed into the mouth of hell.
But there is an unknown hero of whom I fain would sing,
Who tho battle-scarred and weary is still in the fighting ring,
'Tis he who owns an orchard with a first-class steam drilled well,
But whose pump—a fiend incarnate—has oft gone straight plumb to——

Well, listen, while he tells the story with drawn lips and bated breath
How the water came in plenty—how there were but three rows left:
How he figured on some fishing by a shady, mossy shore:
How the water ran so smoothly; how there were but two rows more,
When, oh when, O saints preserve us, by my father's silvery hair,
He stood with limbs atremble watching Mr. Pump—pump air.

Then he hied him to the stable hitched up the dark bay mare
Sent her flying o'er the hillside straight toward the pump men's lair.
"Where's the boss," he wildly stammers, "can I get a gang to come
"To the ranch this very instant, my doggasted pump is on the bum."
Hear the foreman calmly answer—"What's the matter—pumping air?
Well, you are only one of many, but we'll get a gang out there."

Say, that dream of trout abundant, tired feet dangling in the blue
Never looked so fair, entrancing, but such dreams are sad—not true,
For to work he must be going, man the derrick, pull the pump,
Get more casing, rods, etc., keep the hired help on the jump,
For the pump must go down deeper and there'll be no cooling breeze,
'Till the water's once more flowing 'round those last two rows of trees.

TRANSFORMATIONS OF WATER.

It is not strictly true that the total amount of water on this earth is a constant quantity, for the reason that water will temporarily enter into combinations where its function as water is lost. This is particularly true regarding crops which require a large amount of water for their growth transforming it into sugar, starch and other substances. Of course, when such crops, fruits or vegetables reach their final stages in consumption the bound water will be released and finally find its way into the general storage reservoir of nature which is the ocean. Thus the mechanics of nature's water supply are easily understood. The motive power of lifting the water from the ocean to the top of the mountains is, of course, the sun. It is a fact that the power of the sun's rays evaporates thousands of tons of water per second from the various oceans in the form of an invisible vapor which rises in the air on account of its lightness; on reaching higher altitudes where the temperature of the air becomes cooler the air is unable to carry as much water vapor and a portion of the latter is condensed into fine drops which form the familiar clouds in the sky. As these clouds undergo farther reduction in temperature, more vapor is condensed and the clouds become finally so heavy that the air no longer can carry them and precipitation is the result either in the form of rain, hail, snow or dew. The air is never completely free of moisture as it would be impossible to live in air devoid of water vapor. There is, however, a point beyond which air will not carry water vapor and this is called the point of saturation. This point varies with the temperature of the air; the warmer the air the more vapor it will absorb. Thus when winds carry the warm air from the tropical zone into colder regions formation of clouds takes place because the colder air refuses to carry the excess of moisture.

On the Island of Hawaii these phenomena may be observed to very good advantage. There is a mountain range running from north to south through the island; the northeast trade winds blow for about nine months in the year carrying a balmy air saturated with water vapor which has been taken from the water of the Pacific ocean; when the winds strike the cooler highlands and mountains of Hawaii condensation sets in and clouds form causing abundant precipitation; but this just happens on the east side of the mountains; the west side of the range is entirely barren as the air having been robbed of its moisture by the eastern slope refuses to give up any more moisture in the shape of rain or dew. Thus the island of Hawaii presents on its eastern slope the features of a paradise, while its west coast has the aspect of a desert.

It is seen thus that the water supply which nature has provided for instance for these United States, has its power house in the sun, its boilers in the lakes of the United States and the surrounding oceans and its natural storage in the vastness of the Rocky Mountains. The travel of the water is thus: From the ocean in the form of vapor or cloud to the mountains where it is precipitated either as rain or snow. Hence the rain by the force of gravity first forms little brooks which finally gather into rivers and travel down, down to the ocean, where Old Sol remains busy to keep the process agoing.

The water in the form of snow is a wise provision in nature as this is kept, so to speak, in cold storage until the hot sun of the summer months does some more necessary work in melting the snow at a time when natural precipitation is at its minimum, and the melting snow in the mountains thus provides a means of feeding the brooks and creeks and supplying the life-going and life-sustaining fluid to man, beast and plant. This shows also the necessity of keeping the mountain slopes well timbered to prevent the erosion of the soil by the rapid flowing waters.

Another factor in the characteristics of water must be reckoned with, especially by the irrigationist. This is that a heavy percentage of water is lost on its way from the mountains to the ocean by following subterranean passages. Thus although the water itself is not lost, for there is nothing lost in the economy of nature, it fails to do any useful work on its way down to the ocean and may be stranded by getting boxed up in subterranean basins. These are tapped frequently successfully by wells and the water thus obtained will do duty in various ways, but it is seen that by the water being allowed to escape below the natural surface of the ground it will have to be lifted from its hiding place by pumps, which is expensive, while the force of gravity is free. Hence it will be a wise move to watch the more important rivers and irrigation channels and reduce this leakage to a minimum.—Irrigation Age.

Questions and Answers

THE EDITOR AND STAFF

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Peaches Not Bearing.

We have a peach orchard three years old, some trees in which have no fruit, others just a few. Trees growing very rapidly, soil sandy loam in the foothills of this valley. Water was scarce last fall, but is now plentiful. Orchard has good tillage; pruned properly, we think. Other orchards four miles away loaded. Our trees blossomed well, but blossoms all fell off; no frost. Trees do not need nitrogen, for they are growing too rapidly. Will a good dose of potash help another year? If so, how much should be applied? Will summer pruning aid in setting crop next year? Crop last year was good for two-year-old trees. —Subscriber, San Bernardino.

The cause of this failure cannot be told with definiteness from the description given. A number of things may have occurred to prevent this year's crop. Our first guess, and it is little more than a guess, is that "water scarce last fall" may account for the shortage. It must be borne in mind that deciduous trees forming their fruit buds for the next crop late in the season's growth, if deprived of moisture at the critical time, may not give enough vigor to the fruit buds to set the fruit. Again, the climate this spring at blossoming time may have been such that the fruit could not set. We note "no frost," but frost is not always the only cause of a short crop. The warm soil, which might have brought out very early bloom, with a dash of rain when the trees are in fullest bloom, or a hot wind or other unfavorable climatic conditions, might have resulted entirely differently with these trees than with others a few rods away. Then it might possibly be that the variety is such that it will not bear heavily nor until more mature wood is made. We note they were "pruned properly," but if the pruner was desirous of shaping a big, woody top, it is possible that heavy winter pruning removed much of the fruit wood and stimulated strong wood growth. Pinching back new growth and forcing fruit buds which are supplied with abundant nourishment through late irrigation may help another season's crop. The applying of potash may assist in the fruit formation, and to that end an application of, say, 300 pounds of muriate of potash per acre might be beneficial.

Preparing Land for Potatoes.

I have two acres of land which I want to plant to fall potatoes. Two years ago I pulled out grape vines which had been growing for 27 years, have had two crops of hay and planted potatoes last August, but only got about 25 sacks to the acre. What is best to do with this land, what should I put on in the way of fertilizer and what else should I do to insure a good crop? The soil is heavy but not an adobe or clay soil, works up nicely. I want to plant about August 1st. Will plow in about a week.

It is rather late to begin preparation of this soil for August 1st planting. On taking off your crop last year you could have helped the land materially by green manure crop. This could have been supplemented by a heavy application of strawy manure plowed under at time of plowing the green manure crop. Of course the application of a commercial fertilizer rich in potash might be beneficial, but we take it your soil is more in need of a mechanical treatment than chemical. Humus you must have.

Sweet Pickles.

For an inquirer who wished a sweet pickle recipe we repeat from a former Cultivator:

Put cucumbers in cold weak brine (½ cup salt to one gallon of water) for 24 hours. Take out and dry on cloth. To one gallon vinegar add two cups sugar and nearly one ounce of mixed spice, heat boiling hot. Put in pickles and let boil up once. Put in cans immediately, and pour hot vinegar over them; seal up. They keep well, and are very nice.

Another recipe is as follows: Let the cucumbers stand in salt water

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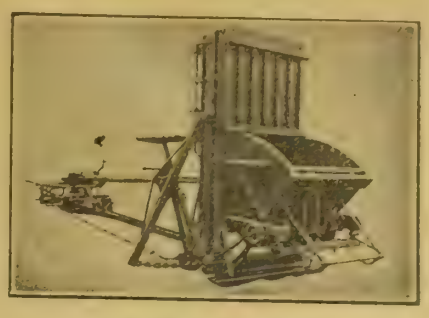

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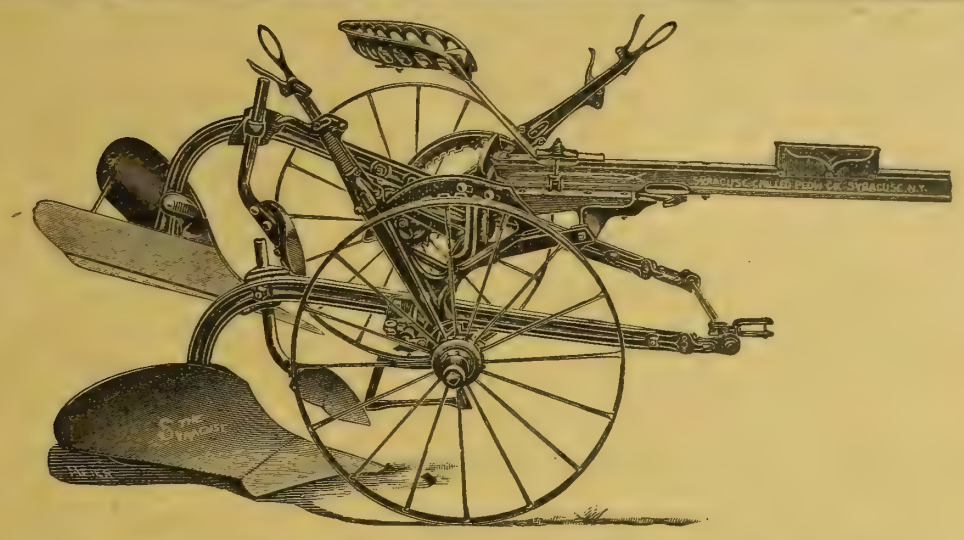

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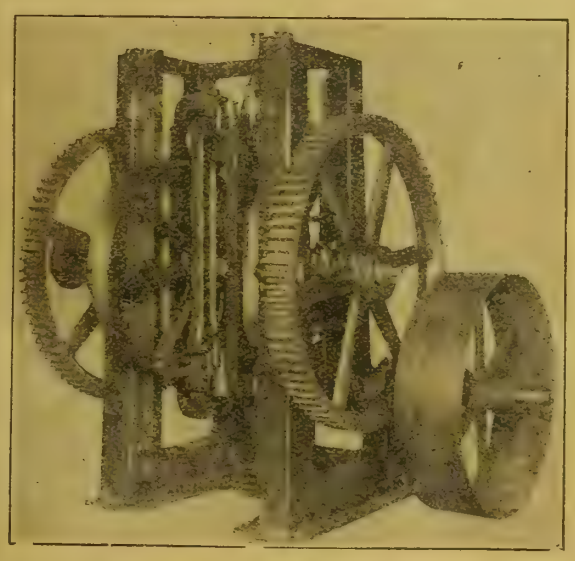

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three days. Heat the brine once or twice and pour over them. Drain; put in a jar and pour over them hot vinegar with cloves and cinnamon in a bag; two-thirds cupful sugar to quart of vinegar; put in plenty of horseradish and this will keep sealed or open. Put in a little alum to make them brittle.

Green Geese.

I want to know if there is any market in California for green geese. Also the best method of fattening the young geese for this condition.—Mrs. L. L. G., Lancaster.

There is a good market in Los Angeles for green geese; that is to say young geese. They are easy to fatten; in fact, if they have access to soaked barley at least three times a day and are finished off with kaffir corn or whole corn for about two weeks before marketing they will be in prime condition. They need not be kept enclosed in a yard or pen, but simply fed three times a day all they will eat. Geese are the easiest fattened and the easiest raised of all fowl. There is good profit in geese. —Mrs. A. B.

Asparagus Tops.

Should I cut tops of asparagus at this time of the year?—C. M., Arroyo Grande.

It would be great injury to the asparagus to cut off the tops at this time. It is upon healthy, vigorous foliage that the plants depend for their root development; and if you do not secure a good strong root system you will have poor tops next year. Sacrifice the corn and give the asparagus water and cultivation until fall.—Q. A. L.

Tomatoes Dropping.

My tomato plants, the thriftiest I could secure at the time of setting, and given best of care, refuse to set fruit. They blossom plentifully, but after blooming drop off at stem and no fruit whatever sets.—E. E. M., Pasadena.

The cool season has doubtless been responsible for this trouble, though the variety may have something to do with it. Only the very earliest varieties will set fruit during such cool weather as we have had this season. Possibly too much water may have been one trouble with your plants, so that their strength has gone to wood growth. Withholding of the water with the warmer weather coming on should result in setting a heavier crop.

Questions of a Beginner.

At what age should I sell my roosters? They are now three, four and five months old. They are Rhode Island Reds. Is blue stone good to use in the water that chickens drink? Is permanganate of potash good in their water?—E. T., Watsonville.

You can sell your cockerels at any age that you choose when there is a good market for them. The three-months-old would be, if properly fed, good broilers or friers, whilst the five-months-old ought to make very nice young roasters or even friers. Sell when there is a demand, or when you want to make room for the pullets or other stock.

Blue stone is a good germicide. That is, it will kill germs of almost every kind. You can use it with advantage if there is roup or colds among the chickens. Do not put more than a small bit as big as a navy bean in a quart of water, no stronger. It is a poison, so keep the pretty bits of blue out of reach of the children. Permanganate of potash is a good disinfectant and can be used if there is disease in the yards, especially for roup. Mix a small amount in the water until the water is colored a pretty pink. The water should be changed three or four times a day, or as soon as it loses its pink color. These two drugs, either combined or separate, are what is given in the different roup cures in the drinking water.—Mrs. A. B.

Aphis.

What is remedy for green aphis on plum trees?—Subscriber, Fruitland.

Green aphis are easily destroyed by kerosene emlusion or tobacco extract spray, or even by the use of water with force from the nozzle of the hose. The tribe increases so rapidly, however, that they will soon return. Continued treatment will be necessary unless weather conditions favor their destruction.

Ants on Rhubarb.

What will destroy ants on rhubarb? Have sprayed with borax, also tried wood ashes and drowning by heavy irrigation.—Subscriber. Delano.

Locate the hill and if it is some distance from the plants, pour a tablespoonful or more of carbon bisulphide down the entrance and cover with a wet sack. Around the plants a liberal scattering of buhach will aid in driving the insects away. The best method, however, is their total destruction in the hill by the carbon bisulphide or boiling water, or even gasoline or kerosene.

Topping Eucalyptus.

Will you please let me know through the columns of your paper which is the best time in the year to top eucalyptus trees. I have a number of trees in my chicken yards, some are two years old and about twenty feet high, the rest were planted in spring, 1910, and are about twelve feet high. I intend to top the trees to give my chickens more shade.—J. R. H., Arroyo Grande.

The safest time of the year to top eucalyptus is in the late fall, but where considerable foliage is left on them they may be topped at any time. Where cut back to a stump in the spring it may endanger the life of the tree, but we have never seen a tree cut in the fall that did not sprout out the following spring.

Blight.

My tomato plants wither, the leaves curling slightly, and later the plants die. They have been frequently watered. The ground is heavy but is kept well cultivated. Tried soapsuds and kerosene on one plant but without results.—Subscriber, Reedley.

This we think simply the ordinary summer blight and the most deadly disease of tomatoes. There is no help other than to prepare for it by securing a new location for next year's plants where tomatoes have not been planted before. The blight is a bacterial trouble which infests the soil and is within the tissues of the plant so that no spray will reach it.

Guavas Not Bearing.

I have a guava bush eight feet tall, six years old, one and a half inches at butt; it blooms, but most of the blooms prove false; all the other trees in the row bear well. Have any of your subscribers had experience in budding or grafting a tree like this?

BUY THE LOWEST COST ENGINE MADE. Lowest fuel cost; lowest up-keep cost; easiest on the machine it operates, delivering steadier power than any other gasoline engine, adapting it especially for operating farm machinery, with better results and least waste of grain. Lowest fuel cost for it runs on Gasoline, Kerosene, Distillate, Gas or Alcohol and has perfect lubrication. Lowest cost because it delivers greatest available power per horse. A slow speed, high duty engine. Starts easier and quicker than any other engine, occupies less space, is less cumbersome, with less vibration, therefore adapting it for either stationary, portable or traction use. **IT IS THE POWER CONTRACTOR'S FAVORITE ENGINE.** No engine made has so wide a range of use. **YOU WILL MAKE A MISTAKE IF YOU DO NOT WRITE US FOR INFORMATION.** 1½ H. P. to 5½ H. P. single cylinder. 6 to 20 H. P. two cylinder. 30 to 50 H. P. four cylinder. State your requirements and get our advise. **THE TEMPLE PUMP CO., Manufacturers, care of David Rutherford, 1396 Harrison St., Oakland, Cal.**

If so, what season of the year did they do it, and how?—B., Pasadena.

We pass this on to our subscribers and ask their experience in this matter. We believe it due to the variety and fear these bushes will never bloom satisfactorily. However, if we had the plants, we would do some experimenting with pruning and fertilizing and other methods of encouraging setting of fruit.

A GOOD GUESS.

The entertainer was seemingly in good voice as he began: "Ladies and gentlemen, having blindfolded my partner, I will now proceed to test her thought reading powers. I have in my hand an apple. Will you kindly tell the audience what it is that I am holding in my hand?" "An apple." "Correct. I have here a watch. Kindly tell the audience what I have." "A watch." "Quite right. You see, ladies and gentlemen, it is impossible to catch her." The entertainer produced a piece of wood and a saw, and commenced to saw vigorously. "Kindly tell the audience what I am doing." No reply. "This is rather a difficult feat, ladies and gentlemen. I will try again. Can you tell me what I am doing?" said the entertainer, continuing his sawing. "Yes. You are singing." Loud applause.—Exchange.

THE UNHAPPY JESTER.

"I hear poor Dobbs, the humorist, has gone to a sanitarium," said Binks.

"Yes," said Higgins, "he's worked himself into a state of nervous prostration that I fear is incurable."

"That's too bad," said Binks. "How did he came to do that?"

"Why, six weeks ago he got an answer to a riddle. 'One's a chau-ffeur, and the other's a fur show,' and he says he'll never be able to sleep until he finds the question it will make a good answer to."—Marper's Weekly.

Young man—I've called, sir, to request the hand of your daughter in marriage.

Old Grumleigh—Has she accepted you?

Young Man—Yes, sir.

Old Grumleigh—Then what do you want to come around and bother me with your troubles for? — Chicago News.

"Good morning, ma'am," said Willie doffing his cap.

"My! What a polite little boy!" exclaimed Miss Passey.

"Do you always take off your cap like that to ladies "

"No'm; only to old ladies."—Philadelphia Press.

Father Knew—Curious Charley—'Do nuts grow on trees, father?"

Father—"They do, my son."

Curious Charley—"Then what tree does the doughnut grow on?"

Father—"The pantry, my son."

"Oh, Willie, what's this queer lookin' thing with about a million legs?" 'That's a millennium. It's somethin' like a centennial, only it has more legs."—Life.

FOR EXCHANGE

For Exchange—1080 acres in prosperous and fast developing part of Kings County; a fertile sedimentary loam, level as a ballroom floor, and absolutely free from defects such as hardpan, alkali, sand, swales, etc. Suited to alfalfa, sugar beets (factory within 20 miles), vines, fruits, grain, etc. Would make first-class dairy, hog or stock ranch. Lies within proven flowing well district and has joint water right in well and ditch water systems. $64,800, cash value; mortgage $8,640. Will take Southern California city or country property, improved or unimproved, to same value. John W. Thomson, 220 S. Main, Los Angeles, Cal. Main 1209, F 3764.

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The Imported Percheron Stallion
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Color gray. Foaled March 1, 1905.
SANSONNET was considered by Mr. Charles Aveline, President of the Percheron Society in France, to be the best two-year-old that he ever raised With immense size, heavy bone, short legs and enormous width, Sansonnet possesses in the highest degree all the qualities most sought for in a perfect draft horse. It is not often that such an extraordinary individual is permitted to leave his native country, and the breeders of America are very fortunate in securing the services of a horse that any breeder in France would be proud to place at the head of his stud of pure-bred mares.
SANSONNET was entered in the Colt class and open class at the International Live Stock Show, Kansas City, Mo., in 1906, and took the blue ribbon in both classes. Weight 2,000 pounds. Sure foal getter and splendid disposition.
Terms to responsible parties. Apply to Wm. M. Way, Secretary Farmers Percheron Horse Association, R. F. D. No. 5, Modesto, Cal

Stallions for Sale—Acclimated animals. All harness broken, sound and gentle. Leader 40637. Dapple gray, 8 yrs. old. Ladoga Leon, 66619, 2 years old. Dark gray. Dam weighs a ton. Liberty 74310. Black yearling. These three are registered in the Percheron Society of America. Atwood, bay carriage stallion, 2 yrs. old. Solid color. Sired by Athadon, 1st dam by Junio, son of Electioneer. McKinney Don, 2 yrs. old. Solid bay with black points. Sire Stanford McKinney. 1st dam Belladonna, standard by trotting record. 2nd dam by Athaneer. Both well broken to buggy. Minnewawa Stock Farm, Fresno, Cal.

Grapewild Farm Herd of thoroughbred Berkshires. State fair prize winners. Boars and sows of all ages, unrelated. Address A. B. Humphrey, Mayhews, Sacramento Co., Cal.

Dairy Floating Thermometers and all kinds of supplies for the dairy at Guy F. Kelsey Co., 108 E. 8th St., Los Angeles. Phone Sunset Main 7496.

For Sale—Shorthorn bulls and Berkshire hogs. Bred for size and quality. H. L. Murphy, Perkins, Cal.

Three Holstein Friesian Bulls, splendid young animals for sale, well marked and subject to registry. Write at once to Geo. G. Roeding, Fresno, Cal.

For Sale—Toggenberg Goats, very fine stock. Will sell cheap. Address A. H. Niemann, Tropico, Cal. Phone, Glendale 47 J.

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Manager of Orange Property—Have had wide experience in handling orchards and alfalfa. Wish position as manager or in directing labor. Specially wide experience with the citrus. Address Y, Cultivator Office.

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GUY F. KELSEY CO.
Full line of dairy supplies. Come in, phone or write. Generous sample of Prosperity Washing Powder given on request. 106 East Eighth St., Los Angeles, Cal. Phone Main 7496.

Makes Money for You—New sugar-beet pulp (Kow Breakfast Food) takes the place of green grass, and is conceded to be the best butter producer in the world. Price 50c per ton f. o. b. cars or wagon at Los Alamitos Sugar Factory, Los Alamitos, Cal.

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For Sale—Agricultural implements, vehicles. Splendid values, lowest prices, liberal credit. See us without fail before buying. Catalogs mailed out of town customers. Write us describing what you wish to buy. When in the city a personal call will show the largest stock and assortment in the Southwest. Arnott & Company. Established 1892. 112-118 South Los Angeles Street, Los Angeles.

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Fine line of Navels—Valencias and Eureka lemons for delivery spring of 1911. Contract now and get the first choice. The King Citrus Nurseries, Whittier, Cal.

For Sale—500 Choice Valencia Orange Trees and some Washington Navels. G. W. Thurston, R. F. D. 6, Box 82, Los Angeles, Cal.

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Ahuacate (Alligator Pears, Avocados), Persea Gratissima. New crop is now coming from Mexico. None better for stock. $4.50 per 100; $40 per 1000. Montarioso Nursery, Box 1500, Santa Barbara, Cal.

Wild Plant Improvement Gardens, Santa Ana, California. Newton B. Pierce, proprietor. Rare choice ornamentals and new fruits from all lands.

Ferns for growing on Adiantum pedatum 5c, Pteris serrulata 3c, Aspidium tsusimense 3½c and 5c. Terms cash. Ballou's Nursery, Pasadena, Cal.

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101 Acres—$5000. Fine river silt soil, water right, fenced and improved; quarter mile of station and large town; pumping plant; 16 head of mules and horses, 20 head of cattle, 2 plows, 1 scraper, chicken corral and chickens; 2 acres in onions and carrots, 4 acres in bananas. One of the most desirable places in the beautiful Culican Valley, State of Sinaloa, Mexico, where two and three profitable crops are raised. Just the place for settler wanting to go to work at once. For terms and further particulars, write Ben W. McCloskey & Co., 700 Union Trust Bldg., Los Angeles, Cal.

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For Sale—160-acre ranch near Escondido; has 80 to 100 acres fine alfalfa land; running creek through the property; 12-room house; 3-room bunkhouse, barn, poultry house and 3 parks; fully equipped. 320 and 80 acre ranches near Escondido; under cultivation and fully equipped. 120-acre ranch at Indio; 4-room house, barn and outbuildings; three 7-in. wells and pumping plant. Snap. W. F. Mencke Co., 714 Story Bldg., Los Angeles, Cal.

For Sale—A 20-acre farm for $20 cash and $20 a month; possession now; $90 to $125 per acre; your crops pay for the land. Rich, level land for alfalfa, oranges, almonds, grapes, cows, chickens; abundance of ditch water, for irrigation, for $1 an acre a year. Where else can you get this? In Oakdale Colony, near good town and railroad station. Climate delightful. T. Wiesendanger, 207 S. Broadway, Los Angeles, Cal.

For Sale—10 acre orange grove in heart of promising little city close to Los Angeles. Trees 12 years old and beauties, burdened with a firmly set crop which will net $5000 this year. Best of soil and plenty water, absolutely frostless. A bargain if sold at once. L. F. Anderson, 800 W. 47th St., Los Angeles.

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Sub-irrigated Valley Ranches near the sea. Good locations for citrus, walnut and lima beans. Good water. Also citrus land in Reedley coves, best location in the state for lemons and English walnuts. John T. Bramhall, care of Cultivator Office.

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Try "San Joaquin Valley Rural Realty Co." Farm Lands. C. F. Calwell, Secretary, Waukena, Cal. He knows!

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Free—"Investing for Profit" Magazine. Send me your name and I will mail you this magazine absolutely free. Before you invest a dollar anywhere get this magazine—it is worth $10 a copy to any man who intends to invest $5 or more per month. Tells how $1,000 can grow to $22,000; how to judge different classes of investments, the real power of your money. This magazine for six months free if you write today. H. L Barber, Publisher, R. 430, 28 W. Jackson Boulevard, Chicago, Ill.

For Sale—Complete Home Canning Plant, capacity up to 500 cans per hour. Wanted—Any amount and variety fruits in cans, provided canned ripe and right where grown. Growers Home Canning Co., 221 Exchange Bldg., Third and Hill Sts., Los Angeles.

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At Los Angeles Show, 1911, every first premium and two silver cups; two specials for best male and female. Eggs at half price, $2.50 per setting. C. C. Bonnell, 2919 Brighton Ave., Los Angeles, Cal.

Baby Chicks from my pure-bred stock S. C. White Leghorns, carefully selected for laying and standard qualities. $9.00 per 100, $85.00 per 1000. Eggs for hatching $5.00 per 100. Correspondence solicited. J. R. Heinrich Poultry Yards, Arroyo Grande, Cal.

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White Leghorns—Buff Orpingtons. Bred for beauty and great egg production. Grand lot of both old and young stock for sale. Prices reasonable. Write your wants. Model Poultry Farm, Box H, Irvington, Cal.

Hicks Jubilee Hatchery, now booking orders. Write us your wants. We use eggs from first-class stock only. Try us. W. J. Hicks, Petaluma, Cal.

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For sale—Second-hand windmills, gasoline engines, wagons, buggies, harness. Disc, gang, walking, riding and side hill plows; slip, Fresno and wheel scrapers; 2 headers, 2 balers, seed sowers, spike tooth and disc harrow, mowers, rake, fanning mill, dry washer, disc cultivator, reaper, blower, anvil, eveners; road grader, road roller, Hurst two-horse sprayer, mining hoist, sundries.

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10-ft. Fairbanks, 30-ft. 4 post tower, 60 ft. 2-inch galv. pipe, rods and brass cylinder, $48 f. o. b.; 13-ft. Aermotor, pumping and power mill, cost new $120, for $60; 12-ft. Aermotor, tower, 10,000-gal. tank, tankstand, 100 ft. 3-inch pipe in well, rods and cylinder; $150 for this large irrigation outfit.

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4 H.P. Stearns in fine shape, 6 H.P. Fairbanks, 6 H.P. White & Middleton, 6 H.P. Union complete with No. 3 vertical centrifugal pump, $175 f. o. b.; 25 H.P. engine and hoist.

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50 gallons to 50,000. Several large redwood tanks, fine for storage, domestic or irrigating, 10,000 gallons, $65; 12,000, $80; 25,000 (600 bbl.), $115; another with 8-ft. stand, $125; 35,000, $140. These tanks must be moved. Lease up, so don't wait if you want a snap. Why buy new when we save you half and guarantee material? Demmitt Company, 120 N. Main St., Los Angeles, Cal.

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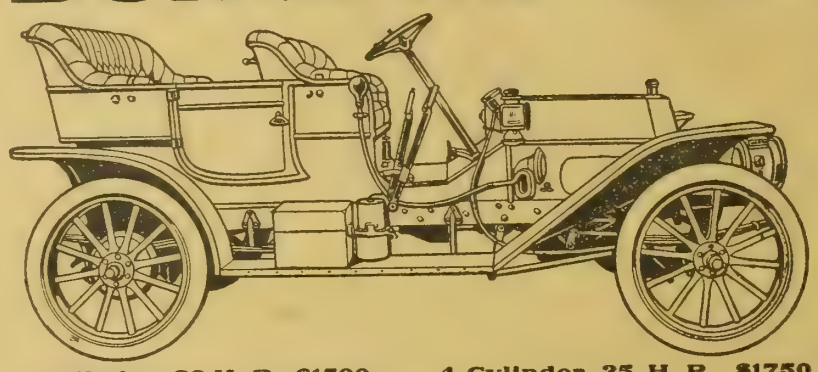

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Household Department

THE FITNESS OF THINGS.

"I'm going to live in the country," said the city man one day,
"I'm going to revel in songs of birds and the perfume of new-mown hay.
I'm going to gather the blossoms bright and gaze on the butterfly
And list to the mystical melodies when tremulous branches sigh."
But the bird he heard was the querulous owl who kept him awake at night,
The insect he met was a hornet; and his was a sorry plight,
In the course of his botanizing he gathered a poison vine
And he hurried away to the station and said: "It's the city, boys, for mine!"

"I guess I'll go up into town awhile," said Uncle Bill one day,
"I'll have a look at the 'lectric lights an' be careless an' downright gay!"
He looked in vain for thoughtless glee in the crowds that went madly by;
He got mixed up in a motor car and a cabman hollered: "Hi!"
He ate a dinner he didn't like, and went to a dreary show,
And slept in a room just six feet square, and he murmured: "I guess I know
When I've had enough. At break of day I'll be headed for home. You see,
The city's the place for city folks. An' the farm is the place for me!"
—Washington Star.

WILL 300 CHICKENS SUPPORT A FAMILY.

A. J. Waterhouse, in the San Francisco Star, says:

Among the weighty questions which will agitate the American Egg Laying Congress (why it should have been so named when it is understood that the congress will lay no eggs, I do not know), which is to meet in Spokane, is reported to be the following:

"Will 300 chickens support an average family?"

Without desiring to disturb the congress while it is setting, I wish to remark that 300 chickens will not support an average family. I speak as one having authority, for I have, in a limited degree, tried it.

A friend of mine first called my attention to the wealth producing possibilities of the chicken business.

"You start with, say, a hundred chickens," he remarked. "They should, if properly fed and cared for, lay at least forty eggs a day. This would be a total of 14,600 eggs in a year, not counting the extra day in leap year. You would set these eggs under some energetic hens, and, allowing for breakage, etc., they would hatch—that is, the hens would—13,100 chickens. At the end of a year, then, you would have 13,100 chickens. If you were intending to go into the business on a small scale these might be enough, but I should advise against that. On the contrary, you would take their eggs—amounting, at the same laying ratio, to 191,260—and set them again. Allowing that but 160,000 hatched, and again saving their eggs and setting them as before, you would at the end of the year have 23,564,360 grown fowls and chickens. Some people might continue to set and hatch, but I should advise beginning to sell the eggs at this time, or you might keep them a few weeks and then sell them at, say, forty cents apiece, and retire on the $9,000,000 or $10,000,000 you then would have, of course, whether or not you desired to be inordinately wealthy."

I had had no previous experience with the hen business, but I examined his figures, found that they were all right, resigned my position, and bought 400 chickens fresh from an incubator. Just 117 lived, and of these 83 were roosters. These should have laid 47 eggs a day, according to my friend's reckoning, but I didn't believe that 34 hens could do it without being overworked, and I object to cruelty to dumb animals.

So I sold most of the roosters for part of what their feed had cost, and bought another hundred chickens. It was a bad spring, and all but thirteen died, and eleven of them were roosters. So I gave it up, and bought some grown hens.

It is a solemn fact that those hens watched the egg market, and were very ungrateful for the food I fed them. When eggs were fifteen cents a dozen they laid nobly; if they went up to twenty-five cents they laid occasionally; when the price increased to forty cents or more, they didn't lay at all, but they ate more than when they were laying. Once I got them to lay for a brief time by leaving a six-months-old market report in the hen house, but they soon discovered the deception. At last I arranged with the feed man to pay him off in monthly installments, and went out of the business.

Conversation with a number of people who have tried a similar experiment has convinced me since then that I am not alone in such experience, and, after considerable consideration, I have concluded that the question to come before the congress must have been misstated in the press reports. Beyond doubt, I think it should read:

"Can an average family support 300 chickens?"

My opinion is that it cannot.

CONUNDRUMS.

When does a man rob his wife
When he hooks her dress.
Why is marriage like the Bible?
Because it ends in revelations.
How can a man make his money go a long ways?
By contributing to foreign missions.
Why does a pig eat?
To make a hog of himself.
Why is it dangerous to keep a clock at the head of a pair of stairs?
Because it sometimes runs down.
Why are hogs like trees?
Because they root for a living.
Why is a plumber like a pelican?
On account of the size of his bill.
Why was the first day of Adam's life the longest?
Because he had no Eve.
When may a man's pocket be empty and yet have something in it?
When it has a hole in it.
What bat flies without wings?
A brick bat.
Why is a tramp like white flannel?
Because he shrinks from washing.
Why is Ireland likely to become the richest country in the world?
Because its capital is always Dublin.
Why is your nose in the middle of your face?
Because it is the center.
What is the difference between one pretty girl and an apple?
The apple you squeeze to get cider,

and the pretty girl you get side-her to squeeze.

What is the difference between one yard and two yards?

A fence.

What is the latest thing in dresses?

Night-dresses.

What relation is that child to its own father who is not its father's own son?

Daughter.

What is the difference between a dog's tail and a rich man?

One keeps a waggin, the other a motor car.

When is butter like Irish children?

When it is made into little Pats.

When you open the window of a railway train what is the first thing to catch your eye?

A cinder.

What should be put up for a rainy day?

An umbrella.

What darkness is it that can be felt?

A black derby hat.

In what place are two heads better than one?

In a molasses barrel.

Who are the men that have made their mark?

Those who cannot write.

If your uncle's sister is not your aunt, what relation is she to you?

Your mother.

What is the difference between an oak tree and a leopard's tail?

One is rooted to the spot and the other spotted to the root.

What is it that a man, no matter how smart he is, overlooks?

His own nose.

When does a ship tell a falsehood? When she lies at the wharf.

What is the best way to keep loafers from standing on the corners? Give them chairs and let them sit down.

Why do hens always lay eggs in the daytime?

At night they are roosters.

What is the hardest key to turn?

Donkey.—Success Farming.

HOMELY HINTS.

Clean mirrors, window panes, etc., by washing with a cloth dipped in alcohol and polishing with a chamois skin or crumpled tissue paper.

To polish cut glass, wash it well with soapsuds, rinse, and then, after drying it with a cloth, polish it with sawdust and a washleather. The glass will be brilliant after this treatment.

To restore faded upholstery, beat the dust out well, then brush. Apply strong lather of castile soap with hard brush, wash off with clear water. Then wash with alum water. When dry the colors will look as well as ever. When colors are faded beyond recovery they may be touched up with a pencil dipped in water colors of suitable shade mixed with gum water.

Make bags of heavy canton flannel with a drawstring at the top to place over the broom and dust the walls with. Have the fuzzy side out.

If silver which is not to be used often is kept in dry flour it will not tarnish, and will need only to be brushed off when wanted for use at a moment's notice.

In laundries starched clothes are dried indoors to keep them stiff. If they need to be bleached they are hung in the sun, and afterwards starched and dried indoors.

Small tin cans can be used for gem or patty cake pans by melting both ends from them and standing them in a dripping pan. The cakes will easily slip out of the bottomless rings.

Gasoline stoves that have to be flashed are more cleanly by using wood alcohol in starting. An old toothbrush is fine to rub wicks on kerosene stoves.

Perspiring hands make it well nigh impossible for many persons to work on delicate fancy work during hot weather. If persons so afflicted will bathe the hands in strong alum water before taking up their work they will have no further trouble. The same treatment before putting on gloves will prevent their being spoiled by perspiration.

FLY POISONS.

A cheap and reliable fly poison, which is not dangerous to human life, is bichromate of potash in solution. Dissolve one dram, which may be bought at any drug store, in two ounces of water; add a little sugar, and place about the house in shallow dishes.

To clear rooms of flies, use carbolic acid, heating a shovel and pouring on it twenty drops of the poison. The vapor will kill the flies. Another method: Burn pyrethrum powder in the room. The flies will fall to the floor stupefied, and may be swept up and burned. The powder should be moistened and molded into cones, and, after drying, each cone should be placed upon a dish and lighted at the top. It will burn slowly, and the odor is not disagreeable.

Flies pass the winter hidden in cracks and holes in attics and cellars. Many of these may be killed in the spring by the two methods just described.

Be sure that all drugs and chemicals used are fresh and pure, otherwise results may not be satisfactory.

THEN HE SHOOK HANDS WITH HIS SON.

"You look like a fool!" thundered the disgusted man to his swell son, just in from college. "More and more like a conceited, harebrained, helpless fool every year!"

Just then an acquaintance of the old gentleman entered the office.

"Hello, Charlie, back, eh!" he exclaimed genially. "Say, you're getting to look more and more like your father every year."

"Ya-as," said Charlie, "that's what the governor's just been telling me."

CHEER UP.

Cheer up!
What if the day's cold
And you're feeling old
And blue
And disgusted, too.
We all do!
Take a brace,
Look trouble in the face
And smile
Awhile.
Nothing's gained by looking glum—
Keep mum.
Put your woes on the shelf,
Keep your troubles to yourself
And—CHEER UP!

Nothing truly can be termed mine own
But what I make mine own by using well;
Those deeds of charity which we have done
Shall stay forever with us; and that wealth
Which we have so bestowed, we only keep;
The other is not ours.—Middleton.

De man dat can't sing an' insists on singin', deah breddern, is nearly as much ob a nuisance as de man dat knows how to sing, but who hez to be coaxed like a balky mule before he'll open his mouf.—Plink Plunk.

American factories are turning out a cartload of watches a day, and yet people come in late to church the same as of yore.

STURDY TOOLS FOR TRYING JOBS
Here is a Keen Kutter Fork—a sturdy bit of springy timber, tipped with three properly curved tines of finest steel, tempered like a watch spring. When this fork is sunk into a well settled bunch of long hay, a man's strength is needed at the end of the handle.
KEEN KUTTER
Farming Tools
—hoes, forks, rakes, scythes, axes, spading forks, corn knives, shovels, spades, ditch tools, manure hooks, potato hooks and bush hooks—are all remarkable for their working capacity. A brawny man and a Keen Kutter Tool is a combination hard to beat when it comes to actual results in work accomplished.
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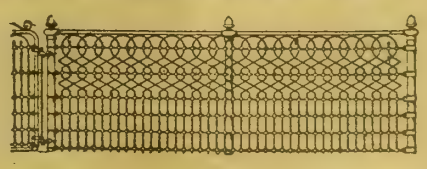

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San Francisco-Los Angeles Produce Markets

Los Angeles Market

LOS ANGELES, July 19, 1911.

Butter.

With nearly 60,000 pounds of butter receipts daily the quotations are held down to the same which have obtained for several weeks. Market is firm.

Prices to trade 2½c in advance of the following Produce Exchange quotations:

Extras	22½
Firsts	21½
Ladles	18
Country	15
Eastern	21

Cheese.

Local Anchor	16
Oregon Daisy	16@16½
Northern Fresh	15
Domestic Swiss	18
Imported Swiss	30@32

Eggs and Poultry.

With the receipts of Easterns stopping, prices on eggs are sure to advance. In fact, a cent advance is noted on practically all grades during the past week. Market firm.

Paying prices f. o. b. Los Angeles are:

Local ranch, candled	29
Case count buying price	25
Northern and Imperial	23@27
Eastern	23

Dealers pay for live poultry f. o. b.:

Hens, per lb	12@15
Roosters	8
Broilers	16
Fryers	16
Roasters	18
Turkeys	22@23
Ducks	14@15
Geese	15
Guinea hens, doz	4.00
Squabs, doz	1.75@2.00

Live Stock.

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs	7¼
Prime steers	6
Heifers	6
Calves, per lb	6½
Sheep, ewes, per head	4.75
Lambs, per head	3.75@4.25
Wethers	5.00@5.50

Potatoes.

Wholesale prices are:

Sweets, yellow, lb	15
New potatoes, lugs	1.25
Burbanks, lug	1.50

Onions.

Wholesale quotations:

Australian Red	1.75
Silverskins, ctl.	1.50
Bermudas, crate	1.75
Yellow Danvers	1:75
Garlic	6@8

Vegetables.

Wholesale quotations:

Artichokes, northern, doz	75@90
Asparagus, lb	7@9
Beets, doz. bunches	20@25
Bell peppers, lb	30
Beans, wax	3@4
Green chilis	12@15
Cucumbers, lugs	1.00@1.50
Cabbage, sack	1.00@1.25
Celery, new, crate	3.00
Carrots, doz	20@25
Corn, lug	35@40
Egg plant	10
Horseradish, lb	12½
Onions, green, doz bunches	10@15
Kolrabi, doz bunches	40
Leeks, doz	35@40
Lettuce, crate	75@95
Mushrooms, basket	3.50@4.00
Oyster plant, doz	35@40
Okra	4@5
Peas, lb	3@5
Parsley, doz bunches	20@25
Parsnips, doz bunches	20@25
Radishes, doz bunches	15@20
Rhubarb	90@1.00
Spinach, doz	15@20
Squash, summer	35@40
Spearmint, doz	25@30
Tomatoes, Mexican, crate	95@1.25
Turnips, doz	30@35
Watercress, doz	25@30

Citrus Fruits.

Valencias	2.25@2.75
Grapefruit	1.75@3.25
Lemons	1.75@5.00
Limes, hundred	1.25

Fresh Fruits.

Wholesale prices on the market are:

Apricots, crate	75@85
Apples, W. Astracan, lug	1.50
Apples, Crabs, lug	1.50
Bananas	4@4½
Cantaloupes, ponies	1.75
Cantaloupes, standard	2.00
Cherries, black, bulk, lb	10@12
Cherries, white, bulk, lb	8@9
Figs, box	75@95
Grapes, Sweetwaters, crate	1.10@1.35
Grapes, Thompson Seedless, lug	1.25
Grapes, Black, crate	1.50
Grapes, Malagas, lug	1.35
Loquats, lb	4@6
Loganberries	7@8
Nectarines, box	1.75
Peaches, lug	1.25
Pineapples	7@8
Plums, Clymans, lug	1.50
Plums, Satsuma	1.75
Plums, Tragedy	1.50
Plums, Burbank	1.35
Pears, box	2.50
Dewberries	4@5
Blackberries	3@5
Raspberries	5@6
Gooseberries, lb	8@10
Strawberries	5@6
Watermelons, lb	1@1½
Prunes	11@14
Plums	10@11

Dried Fruits.

Wholesale prices are:

Evaporated Apples, fancy, lb	20
Apricots	14@18
Figs, box	1.85@2.25
Peaches	8@10
Nectarines	9@10
Pears	13@14

Beans Dried.

Wholesale quotations:

Limas	6.25@6.50
Black eyes	8.00
Pinks	6.25
Lady Washington	4.00
Small white	3.75@4.00
Garvanzas	4.50
Lentils	6.00@7.00

Nuts.

Wholesale quotations are:

No. 1 soft shell walnuts	18
Almonds, IXL, lb	17@18
Pecans, polished	15@16
Peanuts, Eastern	8
Peanuts, California	6
Pine Nuts	18@20

Honey.

The prices given below are general wholesale quotations, but producers are reported as getting 7, 7½ and 8 for water white, white and light amber.

Wholesale quotations:

Extracted water white	9
Extracted light amber	8
Comb water white	18@19
Light amber	15
Beeswax	30

Hay.

Buying prices f. o. b. cars Los Angeles are:

Barley hay	11.00@13.00
Wheat hay	12.50
Tame oat	13.00@14.00
Alfalfa	12.50

Grain.

Wholesale selling price f. o. b. Los Angeles:

Wheat, new, cental	1.70@1.75
Corn	1.70@1.75
Kaffir	1.75
Millet	3.25
Popcorn	4.75@5.00
Egyptian corn	1.65
White oats	1.80
Seed barley	1.50

Feed Stuff.

Wholesale selling price f. o. b. Los Angeles:

Alfalfa meal	1.15
Cracked corn	1.75
Cracked wheat	1.95
Shorts	1.90
Bran	1.65
Oil cake meal	2.50
Feed meal	1.80
Rolled barley	1.45

San Francisco Market

SAN FRANCISCO, July 18, 1911.

Butter.

Butter advanced last Friday a cent on the better grades and now holds the higher price with firm market. Receipts are still liberal, Monday showing 109,000 pounds.

Price to trade 2½c in advance of the following Produce Exchange quotations:

California extras, lb	23½
Prime firsts	22½
Cal. flats	10@13
Seconds	19

Cheese.

Cal. flats	10@12½
Cal. Y. America, fy, new	12½@14½
Oregon, fancy	13½

Eggs and Poultry.

Eggs dropped during the last of the week, but took another advance on Monday of a half cent, but are yet one cent under last week's quotations on fancys.

Official quotations of the San Francisco Wholesale Dairy and Produce Exchange are:

French ranch extras	25
Prime firsts	23
Firsts	22
Seconds	18½
Eastern seconds	16
Select pullets	21
Hens, doz	4.00@9.00
Fryers, doz	4.50@5.50
Ducks	5.00@7.00
Broilers	2.00@3.50
Roosters, doz	4.00@9.00
Geese	2.00@2.25
Pigeons	1.75@2.25
Squabs	2.00@2.50

Live Stock.

San Francisco prices, gross weight:

Steers	4.00@5.25
Cows and heifers	3.25@4.25
Calves, lb	5@6¾
Hogs	5@7½
Wethers, No. 1	4@4¼
Milk lambs	5@5¼
Ewes, No. 1	3½@3¾

Potatoes.

Wholesale market quotations:

Early Rose	1.00@2.00
New Burbanks	1.00@2.00

Onions.

New green, box	50@65
Red, new, sack	1.00@1.25
Silverskins	1.35@1.50
Garlic, lb, new	3@4

Vegetables.

Wholesale quotations:

Asparagus, box	1.00@2.00
Beans, string	1@1½
Beans, wax	1@2
Bell peppers	10@15
Carrots	60@75
Cucumbers, box	40@60
Corn, sack	1.00@2.00
Chili peppers, box	50@85
Celery, crate	1.50@2.50
Egg plant, lb	6@10
Cauliflower, doz	75@1.00
Egg plant, lb	10@15
Lettuce, crate	75@2.00
Okra, lb	6@10
Peas, sack	1.00@1.50
Summer squash, lug	40@60
Tomatoes, crate	25@30
Turnips	60@75

Citrus Fruits.

Valencias	2.00@3.00
Grapefruit	75@2.75
Lemons	1.75@5.50
Limes, Mexican	6.00@6.50
Tangerines, halves	1.25@1.50

Fresh Fruits.

Apricots, crate	80@1.00
Apples, Early Harvest	75@1.00
Apples, box	25@2.00
Apples, new, green, 20-lb box	50@1.50
Cantaloupes, ponies	1.50@2.00
Cantaloupes, standard	2.00@2.50
Nutmeg melons	1.50@2.25
Cherries, white, lb	4@5½
Cherries, black, lb	6@7
Cherries, white and red	60@80
Currants, chest	8.00@9.00
Figs, layer	30@50
Grapes, Thompson Seed	1.25
Grapes, Malagas, box	1.50
Peaches, box	60@90
Pears, box	60@2.50
Plums, box	50@75
Plums, Tragedy, box	60@75
Loganberries, chest	2.50@3.50
Blackberries, chest	2.50@3.00
Raspberries, chest	4.00@6.00
Strawberries, Banners	7.00@8.00
Longworths	7.00@9.00
Malindas, chest	4.50@6.00
Pineapples, Hawaiian	2.00@3.50
Bananas	1.00@1.50
Watermelons, lb	1½

Dried Fruits.

FRUITS—1911 crop, f. o. b., carload lots, per lb.—Apples, 9¾@11c; Apricots, 14½@16½c; Peaches, 9@10¾c; Prunes, bulk basis, 4¾@6c; per lb., 4@8¼c, with a premium of ½@1c on large sizes; Figs, 5@6c for White; Pears, nominal.

RAISINS—1911 crop; Seeded, per pkg. —Fancy, No. 16, 7½@7¾c; Choice, No. 16, 7@7¼c; Loose Muscatels, in 50-lb. boxes—Standard, 4-crown, 6½@6¾c; do, 3-crown, 6c; do, 2-crown, 5½c. Seedless—Muscatels, 5c; Sultanas, 6@6¼c; Thompsons, 6¼@6½c.

Nuts.

Walnuts, No. 1 soft shell	16@16½
Walnuts, No. 1 hard shell	14½
Almonds, '10, N P U	15½@16
Almonds, '10, Nonp	18@18¾
Almonds, '10, I X L	16½@16¾
Pecans	14@17
Chestnuts, California	6@8
Peanuts	5@5½

Beans Dried.

Limas	6.10@6.25
Pink	4.80@5.00
Black eyes	6.25@6.50
Small white	3.40@3.50
Large white	3.25@3.40
Kidneys	5.50@6.00
Garbanzos	2.50@3.25
Bayou	3.75@4.00
Horse beans	3.00@4.00
Red Mexicans	5.35@5.50
Cranberry	3.50@3.75

Hops.

Hops, coast, 1910	24½@26
Hops, 1911 contracts	24@26
Hops, Oregon, 1911	25@27

Honey.

Water white, comb, '11	15
Dark comb	12½
Extracted white, '11	9@10
Extracted dark	6½
Beeswax, lb	24@30

Hay.

Scott, Magner & Miller say:

Arrivals for the past week have amounted to 2211 tons. This amount shows a continuation of the light receipts that we have had for several weeks past, and yet there has been enough coming into San Francisco to very easily supply the demand.

The shipments have consisted recently of a larger percentage of new crop than heretofore, although there is still much old directed toward our markets.

Shipping trade has been rather quiet recently as there have been no orders of any extent placed here for shipment either along the coast or for exporting.

What alfalfa has been coming in has consisted of first-cutting, although there is a little second-cutting now being directed to our markets.

We quote the wholesale prices in round lots on today's market as follows, viz:

Fancy wheat hay	14.00@14.50
No. 1 wheat or wheat & oat	11.50@12.50
No. 2 wheat or wheat & oat	10.00@11.00
Choice tame oat	12.00@12.50
Other tame oat	8.50@10.50
Wild oat	9.00@10.00
Stock hay	5.50@6.50
Alfalfa	9.00@10.50
Straw, bale	40@50

Grain.

Wheat	1.42½@1.50
Barley, fancy	1.27½
Barley, good to choice	1.25@1.27½
Oats, white	1.50@1.60
Rye	1.50@1.60
Mustard, brown	5½
Alfalfa seed	18
Millet	3@3½
Flaxseed	5@5¼
Brom corn seed, ton	25.00@30.00

Feed Stuff.

Alfalfa meal	14.00
Bran, ton	28.50@30.00
Feed cornmeal, ton	37.00@38.00
Cracked corn	38.00@39.00
Rolled barley, ton	27.50@28.50
Rolled oats, ton	29.00@30.00
Middlings	32.50@35.00
Oil cake meal	42.00@43.50
Cocoanut cake, ton	25.50@26.50
Mixed feed, ton	25.00@27.00
Shorts	29.00@31.00

Deciduous Fruit Market

SACRAMENTO, July 15, 1911.

Manager F. B. McKevitt of the California Fruit Distributors reports:

The following gives number of cars of deciduous fruit shipped from all points in California for the week (7 days) ending Friday morning, July 14th, 1911:

Cherries—7½ cars. Cherry shipments have kept up better than expected. They have been running as high as two cars a day occasionally, but dropped off to less than one car on the 13th, and none at all on the 14th. Movement is now practically concluded.

Apricots—8 cars. So few of this variety are now available that they are not worth mentioning. Movement will entirely cease this week.

Peaches—83 cars. This fruit has not been in as large supply as expected last week, and will continue light for the week to come. The early varieties are now nearly done. Early Crawfords and Fosters are beginning to make their appearance. Car lot shipments of these varieties will begin next week from the San Joaquin Valley. Quality of the fruit is fine. About the 20th of July the heavy movement of peaches will begin and will continue for about three weeks. The crop is not as large as expected.

Plums—184 cars. It is likely that the plum movement was as heavy the past seven days as it will be at any time during the season. The early sections are now practically through with the heavy shipments, although they will continue in lighter supply for the next three weeks. In the Valley the large shipments are just beginning. Offerings for the next seven days will probably be considerably lighter than during the past week. Tragedy, Sugar, Bradshaw, Wickson, Santa Rosa, Comedy and a few Diamonds will represent the varieties available next week.

Pears—60 cars. Bartletts from the river are now coming in more freely, movement for the past seven days being nearly five times as large as the previous week. Fruit is now better developed, both for size and quality. It is expected that shipments of this variety will be as large during the next seven days as at any time during the season. There has been some complaint of the reappearance of fire blight in the pear orchards, but same will not affect the output this season.

Grapes—The first shipments of Fontainbleaus from the Vacaville section appeared several days ago. Carlot shipments of Thompson Seedless are now going forward from the Imperial district and some have already reached Eastern markets. Outlook for the grape crop continues fine. Mildew has appeared in several different sections, but is being promptly looked after, and it is not expected that it will have the effect of materially decreasing shipments.

Weather is seasonable and pleasant—considerably warmer than it has been in the past, but ideal for fruit.

Shipments of fruit from this state so far this season have been disappointingly small. On July 14th, 1910, total shipments amounted to 2460 cars. On the same day this year the total had only reached 1198¾. Allowing for 100 more cars, owing to the increase of the minimum from 24,000 to 26,000 pounds, would give us a total of 1300, as compared with 2460 last year, or a little more than half. Owing to this very considerable shortage there has not been enough fruit to go around, practically every market requesting supplies which were impossible to furnish. After this week an increase in shipments should begin to cut down this great difference.

Citrus Fruit Market

LOS ANGELES, July 19, 1911.

With fairly liberal shipments of oranges going forward it is gratifying to note the reception they are being given in all parts of the East. The trade has invariably slowed up after the Fourth of July trade has passed, but this year is an exception and good demand continues. The fruit is carrying exceptionally well even to the farthest Eastern points. From 50 to 75 cars are going daily and the 4,000 to 5,000 cars yet in California will be cleaned up before the end of the season. As to the coming crop the weather has proved so favorable that there has been practically no drop, and so far as can be judged at this season next year's output will be heavy.

Weather conditions having materially modified over the East, the demand for lemons has slackened somewhat, so that prices are not up to last week's standard. Markets have been reached never before entered by California lemons, and it is felt that the reputation secured will materially aid in future sales. Foreigns are still coming, but Californias are a long favorite.

Shipments.

Shipments of oranges to date since November 1st, 1910: 33,507 cars, lemons

Cream Separators, all sizes and prices. Guy F. Kelsey & Co., 106 East Eighth St., Los Angeles, Cal.

5,520, total 39,027. To same date last season: Oranges 23,028 cars, lemons 3,751, total 26,779.

NEW YORK, July 17.—Eighteen cars Valencias, one car grapefruit sold. Valencias higher. Raining.

VALENCIAS—	Avge.
Glendora Heights, fy, A. C. G. Ex.	$4.60
Glendora Heights, ch, A. C. G. Ex.	4.15
Evolution, A. C. G. Ex.	3.80
Iris, D. M. Ex.	4.25
Violet, D. M. Ex.	3.85
Jasmine, D. M. Ex.	3.50
Vista Bonita, A. F. Ex.	4.50
Violet, D. M. Ex.	4.05
Alhambra, S. T. Ex.	3.85
Don Quixote, S. T. Ex.	3.40
Pet, S. A. Ex.	3.95
El Capitan, S. A. Ex.	3.70
Argonaut, S. T. Ex.	4.00
Sequoia, S. T. Ex.	3.80
Red Shield, A. C. G. Ex.	3.95
Alhambra, S. T. Ex.	3.90
Titus Ranch, fy, San Marino G. P. A.	3.90
Woodland	3.90
Blue Bell, fy, Randolph Ft. Co.	3.60
Elephant, Elephant Orchards	4.05
Elephant seconds, Elephant Orchards	3.60
Planet, S. S. Ex.	3.95
Old Mission, fy, Chapman	4.70
Old Mission, ch, Chapman	4.35
Golden Eagle, sd, Chapman	3.95
Aurora, E. Peycke Co.	4.10
GRAPEFRUIT—	
Canna Seedling	$3.00
Cosmos	2.75
Signet	2.25
Colonel	2.00
Signet	2.70
Colonel	2.05
Old Mission	4.55
Golden Eagle	3.20

BOSTON, July 17.—Ten cars sold. Cool and cloudy. Market strong, prices higher on oranges, easier on lemons.

VALENCIAS—	Avge.
Nonpareil, Covina Ex., Covina	$4.60
Quail, O. K. Ex.	4.35
Glendora Heights, xfy, A. C. G. Ex.	4.60
Evolution, A. C. G. Ex., Glendora	4.00
Robusta, A. H. Ex., Pachappa	4.65
Robusta "C," A. H. Ex., Pachappa	4.60
Alta Cresta, A. H. Ex., Pachappa	4.85
Robusta, "L," A. H. Ex., Pachappa	4.70
Hobo, A. H. Ex., Pachappa	4.35
Hobo "C," A. H. Ex., Pachappa	3.95
Tunnel, S. T. Ex., Fernando	4.30
LEMONS—	
On Honor, L. G., Lemon Grove	$6.75
N. W. B. Selected, V. C., Santa Paula	6.05
Hiddendale, E. C. U., Escondido	5.55
Pet, S. A. Ex.	6.50
Pet, S. A. Ex.	7.05
As You Like It, L. G., Lemon Grove.	6.30
N. W. B., Loma, V. C., Santa Paula	5.65
Del Diablo, E. C. U., Escondido	4.70
Greyhound, S. A. Ex.	5.25
SEEDLESS GRAPEFRUIT—	
Alta Cresta	$3.25

PHILADELPHIA, July 17.—Seven cars Valencias, two mixed cars and one car lemons sold.

VALENCIAS—	Avge.
Queen Bee, Q. C. Ex., Corona	$3.80
Sunset, Q. C. Ex., Corona	3.60
S. S., S. S. Ex., Orange	3.55
Honor Bright, A. F., Highgrove	3.65
Yankee Doodle, A. F., Highgrove	3.25
Royal, Q. C. Ex., Corona	3.40
Eagle, A. F., Highgrove	3.50
Stag, A. C. G. Ex., Glendora	4.65
Hunter, A. C. G., Glendora	3.70
Don Quixote, S. T. Ex.	3.75
Alhambra, S. T. Ex.	3.70
LEMONS—	
As You Like It, L. G., Lemon Grove.	$4.95
Growers, L. G., Lemon Grove	4.35
GRAPEFRUIT—	
Carmencita	$2.60

PITTSBURGH, July 17.—Two cars sold. Market active on oranges, steady on lemons. Cool.

VALENCIAS—	Avge.
Camellia, xfy, Red. Mu. O. G. A.	$4.65
Lotengo, fy, Sparr Ft. Co.	4.15
Blossom, xc, Red. Mu. O. G. A.	4.25
Del Oro, ch, Sparr Ft. Co.	3.70
SWEETS—	
Crackshot	$3.05
Del Oro	3.00
LEMONS—	
Crackshot	$4.95

ST. LOUIS, July 17.—Cool. Four cars sold. Market strong on Valencias.

VALENCIAS—	Avge.
Planet, S. S. Ex., Orange	$3.55
S. S., S. S. Ex., Orange	3.50
Searchlight, S. S. Ex., Orange	3.60
LEMONS—	
Bridal Veil, V. C., Limoniera Co.	$4.90
Symbol, ch, Stewart Ft. Co.	3.15
Joy	3.00
Whitecross, V. C., Limoniera Co.	3.45
Sumclass, sd, Stewart Ft. Co.	2.85

CLEVELAND, July 17.—Two cars Valencias, two cars lemons, one mixed car sold. Market higher on oranges, easier on lemons.

VALENCIAS—	Avge.
Carmencita, S. T. Ex., Placentia	$4.00
Nonpareil, Covina Ex., Covina	3.75
Popular	3.40
Colombo, S. T. Ex., Placentia	3.70
Carnation	3.60
LEMONS—	
EEE, S. T. Ex., Leffingwell	$5.55
Arab, S. A. Ex.	5.55
Pet, S. A. Ex.	5.30
Pup, S. A. Ex.	5.25
ST. MICHAELS—	
Carnation	$3.65

CINCINNATI, July 17.—Warm. Market strong on Valencias, steady on lemons. One car Valencias, two cars lemons sold.

VALENCIAS—	Avge.
Pico, S. T. Ex., Whittier	$3.80
LEMONS—	
As You Like It, L. G., Lemon Grove.	$4.60
Quaker Girl, S. T. Ex., Whittier	4.40
Growers, L. G., Lemon Grove	4.05
Greenleaf, S. T. Ex., Whittier	3.75

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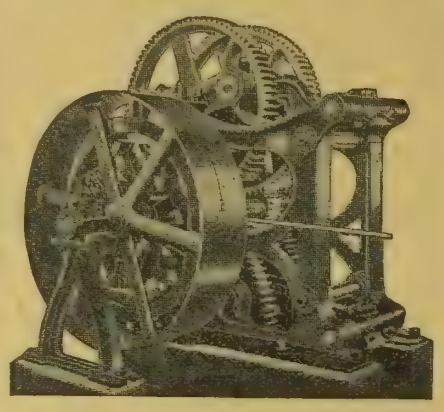

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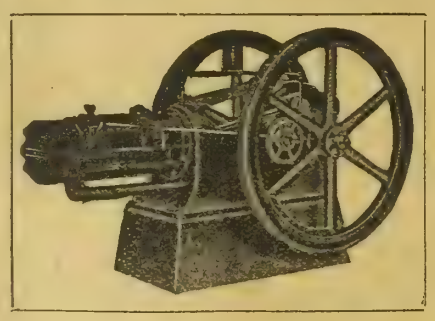

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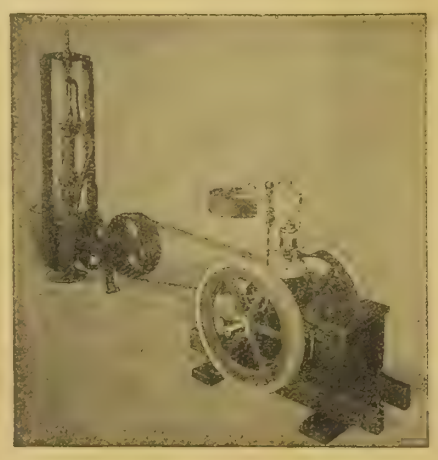

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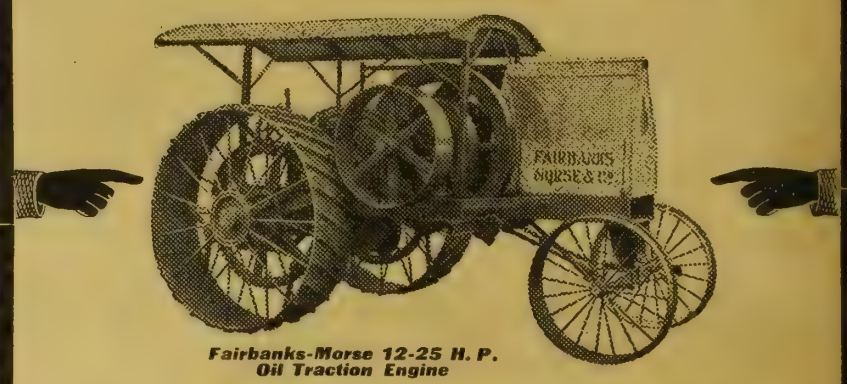

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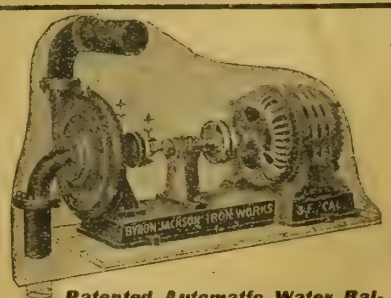

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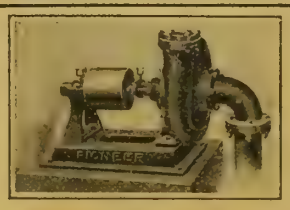

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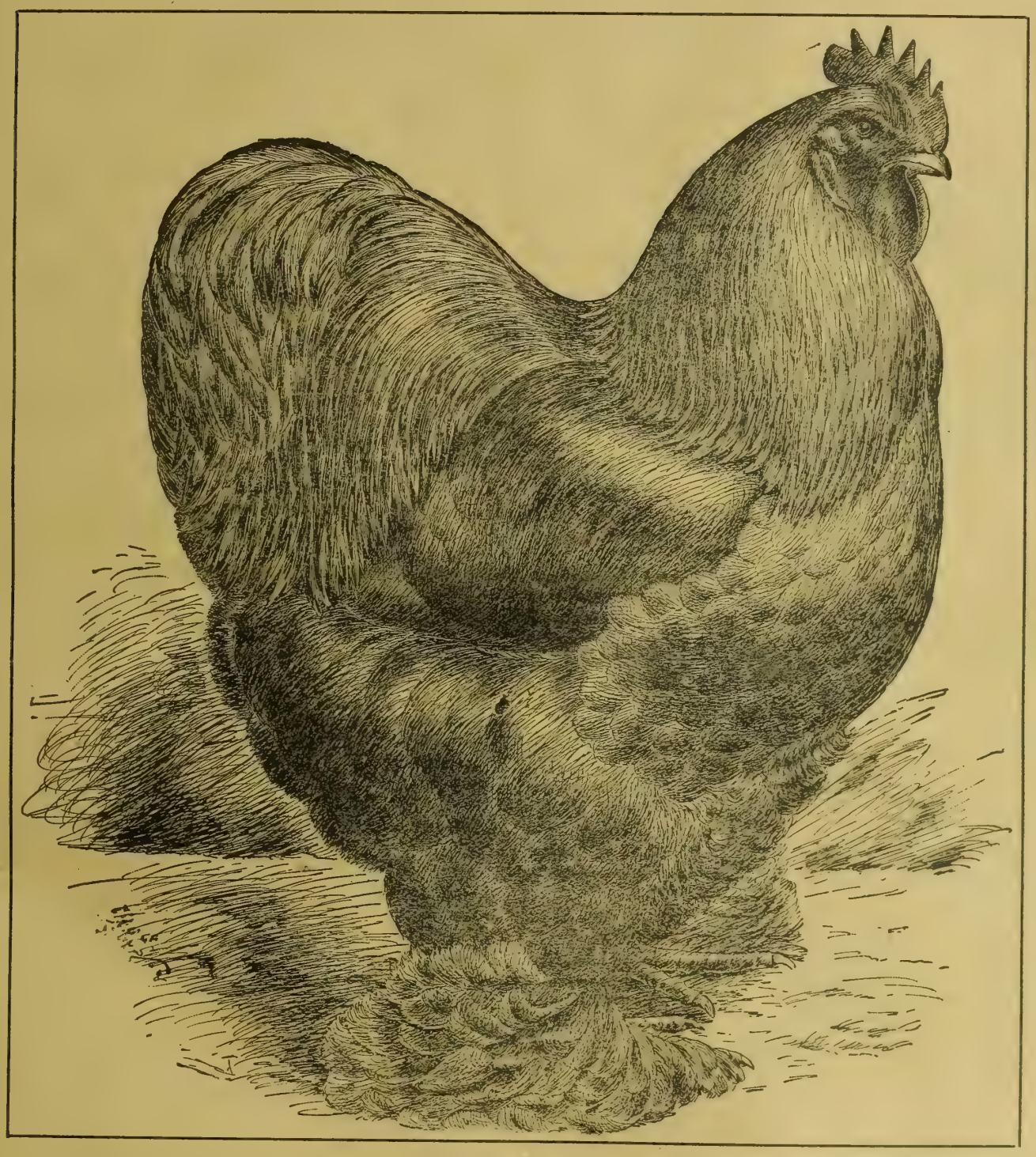

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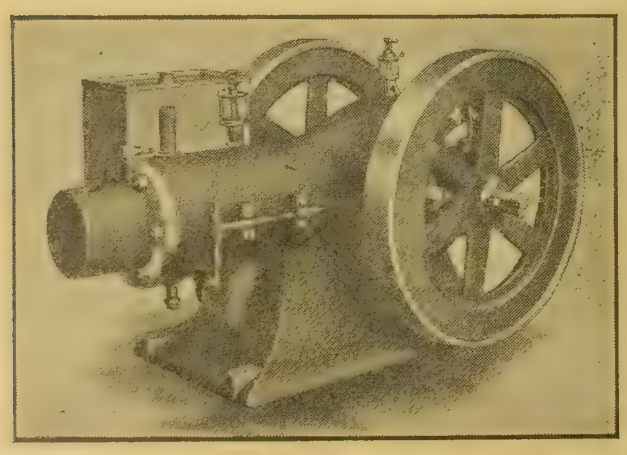

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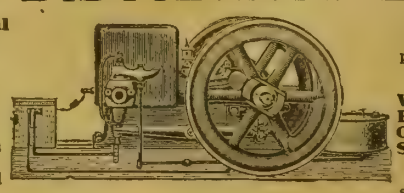

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California Cultivator

Vol. XXXVII. No. 4. LOS ANGELES: THURSDAY, JULY 27, 1911 One Dollar the Year

The Leaf Weevil a Menace to Alfalfa

By F. M. Webster, in Charge of Cereal and Forage Insect Investigations, Bureau of Entomology

The alfalfa weevil (Phytonomus murinus Fab.) is not native to America, but has been accidentally introduced from Europe, western Asia, or northern Africa, where it is common, and where, while more or less destructive to alfalfa, it is probably prevented by its natural enemies from working serious and wide-spread ravages. Just where or in what manner it was brought to this country no one knows, but it was first discovered in the spring of 1904 in a small field of alfalfa, near Salt Lake City, Utah, and attention promptly called to its presence there by the entomologist of the Utah Agricultural Experiment Station.

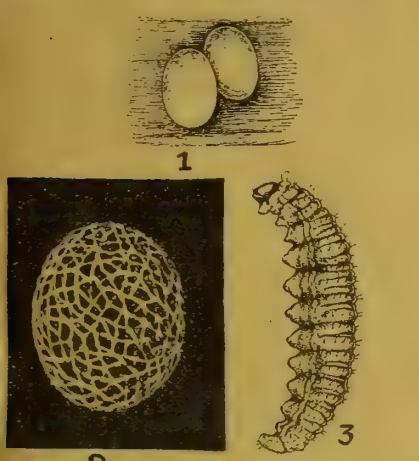


Fig. 1.—The alfalfa weevil: Eggs. Greatly enlarged. Fig. 2.—The alfalfa weevil: Cocoon. Much enlarged. Fig. 3.—The alfalfa weevil: Larva. Much enlarged. Fig. 4.—The alfalfa weevil: Pupa. Greatly enlarged. Fig. 5.—The alfalfa weevil: Adult. Much enlarged.

The Fully Developed Insect.

The beetle itself (natural size in Fig. 8) is usually less than one-fourth of an inch in length, varying from one-eighth to three-sixteenths inch, and when freshly emerged from the cocoon (fig. 2, much enlarged), within which it passes from the larva (fig. 3, much enlarged) to the pupa (fig. 4, much enlarged), is of a plain brown color. In a few days this brown becomes darker, mixed with black and gray hairs, which give it a spotted or mottled appearance, as shown, much enlarged, in figure 5. Gradually these scales and hairs become rubbed off, so that in spring we frequently observe individuals that appear almost entirely black, with small, irregular gray spots upon them.

Where It Winters.

The insect winters entirely in the beetle stage, seeking shelter, before the frosts of autumn commence, either in the crowns of alfalfa plants, close to the surface of the ground in the field, or under leaves, matted grass, weeds, and rubbish along ditch banks, haystacks, and strawstacks. Indeed, it is oftentimes found in barns where the hay is kept over winter. When this hay is being put into the barn in late summer, one side of the barn has been observed to be almost covered with adults, and in winter and spring, when the hay is being fed out, the floor of the barn will often be swarming with the beetles, like ants about an ant hill. It has been estimated that fully 80 per cent of the beetles that go into winter quarters in the fall live through until spring. With the coming of spring the beetles make their way forth from their hiding places and attack the young growth of alfalfa as soon as there is sufficient food for them. In ordinary seasons they may be expected to appear the latter part of March, and the egg-laying period usually lasts from early April until early July.

Where the Eggs Are Laid.

In very early spring, before the plants have made much growth, the beetles often push their eggs down between the leaves, the usual place of oviposition, however, being in punctures made in the stem (fig. 6), and some damage occurs at the very beginning of the season on account of the beetles puncturing the young stems and killing them in their efforts to oviposit in them. Some idea of the abundance of these eggs and the extent to which the pest may breed in vacant lots and other waste lands where alfalfa has escaped from cultivation and grows as a weed may be obtained from the fact that in one case a single plant has been found to contain 127 of these egg punctures in the midst of the egg-laying season, with the punctures fresh and new. As one puncture may contain anywhere from a few to over 30 eggs, probably 10 or 15 on the average, this single plant presumably contained between 1200 and 1300 eggs at the time it was observed. If these hatched and half of them developed into female beetles and 80 per cent of the latter passed the winter, this plant might in a year give rise to over 150,000 beetles.

The Young.

Most of these eggs (fig. 1, greatly enlarged) hatch in about ten days after being deposited, and the minute young, almost white in color, make their way to the leaves, first eating holes therein, soon assume a decidedly green color, and when full grown are about one-fourth of an inch long, with a white stripe along the back and the somewhat hooked appearance shown by some of those in the illustration (fig. 6). The attack is now confined to the young leaves and the crown of the plant, thus preventing its growth, and a badly infested field of alfalfa will frequently attain no greater height than about 6 inches, too short to mow at all. If the field is mown over most of the larvae will of course be shaken off and drop to the surface of the ground. While some of these perish, those that survive and live upon the fresh growth, together with those hatching from eggs deposited after the mowing, develop sufficient numbers to overwhelm and destroy the second crop. The larvae continue to attack the plants, being most abundant during May and gradually becoming less abundant throughout the month of June. As these transform, the adults become more and more abundant as the season advances, and not only do they feed upon the fresh growth, but they also eat the bark from the stems, and thus, where excessively abundant, totally destroy the second crop. Eggs have, however, been found as late as October 31 and larvae as late as the middle of November.

Fig. 6.—The alfalfa weevil: Larvae attacking a sprig of alfalfa. Natural size. Fig. 7.—Larva much enlarged.

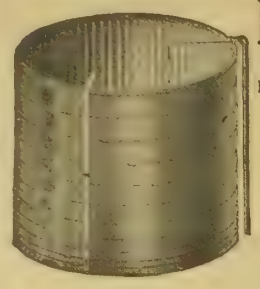
Fig. 8.—The alfalfa weevil (Phytonomus murinus): Adults clustering on and attacking sprig of alfalfa. About natural size.

The entire life of the insect, from the deposition of the egg to the emergence of the adult, may be anywhere from 40 to 70 days, while the beetle itself may live, including the winter, from 10 to 14 months.

In the first four years following its discovery the alfalfa weevil has spread over a total area of fully 100 square miles of territory. So rapid has been its diffusion and so destructive its effects upon alfalfa that in the fall of 1909 the governor of Utah appealed to the Secretary of Agriculture for help in the investigation of the pest and in experimentation, with the hope of finding some measures of relief. At the present time it is known to occur from Salt Lake City southward as far as Provo and northward probably to Ogden, as it has been found within a few miles of that city. It occurs westward to Tooele and eastward, at any rate, as far as Echo City. It will not be at all surprising if by another spring it is found in southwestern Wyoming, Southern Idaho, Nevada, and perhaps Colorado. The beetles have been repeatedly observed in cars on railway trains passing in and out of Salt Lake City. In one instance 27 were taken in the vestibule of one sleeping car on a train in Salt Lake City one day in July of last year, and have been found on freight cars within sight of the Idaho line. There does not appear to be any reason why it may not be carried in the same way over the San Pedro, Los Angeles and Salt Lake railroad and left in the alfalfa fields of Southern California, while by similar modes of distribution it may be carried by the Oregon Short Line railroad into Idaho and by the Union Pacific railroad eastward into the alfalfa fields of Wyoming and Colorado. It is within the range of probabilities that it may find an eastern outlet over the Denver and Rio Grande railroad into Southern Colorado and Western Kansas. When we come to take into consideration the fact that alfalfa escapes from cultivation, and in many cases grows as a weed along these railways and roadsides, we can well understand how easily these insects might be transported by the railways and, losing their hold, drop off along the way and find ample food in this alfalfa that has escaped from cultivation.

Besides railways, there is another

(Continued on Page 79.)



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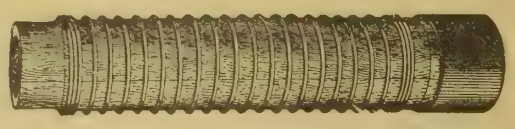

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"WITHER TIP."

By Prof. Ralph E. Smith.

Written Especially for the California Cultivator.

A casual mention of this subject made by the writer in a recent contribution to the Cultivator has excited so much interest that a more specific statement of our information and views along this line seems called for.

The "Wither Tip," "Anthracnose," or "Tear Stain Fungus" of citrus trees has been reported in probably every country where such trees are grown. Soon after his arrival in California in 1903, the writer found this fungus a common inhabitant of citrus trees in the state, but occurring manifestly only upon twigs and leaves which had first been killed or weakened from other causes. "Wither Tip" had therefore excited no interest or alarm over its occurrence.

In the winter of 1908-1909 there occurred in one of the largest and most important lemon groves in the state a large amount of a peculiar and unusual spotting of the fruit. The lemons, while still on the tree, showed an abundant sprinkling of small, red spots or dots over the surface of the exposed side, giving them a speckled appearance. In the curing house most of these dots remained practically unchanged during curing, while a few enlarged and turned black. Fruit thus affected while on the tree was mostly of the "tree ripe" or light green grade.

It happened during the prevalence of this unusual fruit spotting, that two well known eastern plant pathologists visited California, namely Dr. Albert F. Woods of the United States Department of Agriculture, and Professor P. H. Rolfs of Florida. Both gentlemen inspected this orchard and both suggested that the "wither tip" fungus might be the cause of this trouble, noting the presence of the fungus in the trees on dead twigs and sickly leaves. They were also of the opinion that this unusual attack might have followed an unusual abundance of red spider, the fungus gaining entrance to the fruit through punctures made by the insect.

The revival of the California lemon industry which has taken place during the last few years has been accompanied by a marked increase in attention to all things which affect the welfare of the tree and the quality of the fruit. Tree diseases and fruit blemishes which passed unnoticed a few years ago are now matters of the greatest concern to the grower. For this reason, the possibility of a new, serious citrus disease being present in the form of "wither tip" has aroused much interest. Many specimens have been sent to Washington and to Florida by various persons, said specimens having comprised diseased twigs and leaves, spotted fruit and fallen blossoms and young fruit, and in many cases reports have been received that the "wither tip" fungus was found in abundance about these specimens. Various reports and articles have been published upon the subject of "wither tip" in California, based almost wholly upon Florida experience and writings, and considerable apprehension and unnecessary alarm have been created thereby.

The most specific effects attributed to "wither tip" have been as follows: Killing of twigs and branches. Spotting of leaves. Dropping of leaves. Spotting of fruit on the tree. Spotting of fruit in storage or transit. Dropping of blossoms and young fruit. These effects are supposed to be most marked in the case of the lemon, quite common in the grape fruit and less prevalent in the orange.

Wishing to gain all possible information about "wither tip," the writer took advantage of Professor Rolf's presence in the state in 1909 to visit many lemon groves with him and have him point out the effects of the disease. The Florida expert found the fungus abundant in many trees, but in a manner which entirely confirmed previous California experience. Badly affected trees were in every case those which were already sick with gum disease or much weakened by drouth or lack of care. In such trees numerous dead twigs could be found, covered with the characteristic fungus growth, but such twigs would in every case have died in any event, "wither tip" or no "wither tip." In healthy trees there was no "wither tip," save in broken twigs or those which had been injured in some obvious manner.

The writer, therefore, remained in a very conservative frame of mind in regard to the injurious effects of this fungus, except in the case of the fruit spotting in the one lemon grove mentioned above. Largely on account of this case, a special investigation of the whole subject of "wither tip" was started, being carried on by Mr. C. O. Smith. At the same time investigations were carried on upon the general subject of the various forms of lemon blemishes and decay.

After a large amount of careful work, Mr. Smith reported that he was utterly unable to attribute any parasitic effect whatever to the "wither tip" fungus. After obtaining pure cultures of the organism from dead twigs and leaf spots, he tried in every conceivable way to infect healthy fruit and twigs. Innumerable quantities of spores, suspended in water, were sprayed over fruit and leaves with no effect whatever. Punctures were made into the rind of lemons on the tree and masses of the fungus inserted. Still no result. Young lemons and blossoms were sprayed profusely with spores; no effect as to dropping or in any other manner. Lemons covered with red spider were sprayed profusely with spores and no spotting produced. Such experiments were made in dry, wet, cold and hot weather; during rain and sunshine. Even under the most favorable conditions it seemed absolutely impossible to reproduce the effects attributed to "wither tip."

Desiring to leave no uncertainty in the matter, the writer sent to Cornell University for the most competent graduate in plant pathology whom they could supply to reinvestigate the subject. In this way Mr. C. N. Jensen was secured and, after studying the problem for several months, he entirely corroborated Mr. Smith's conclusions. After Mr. Jensens' unfortunate departure from California to another position, "wither tip" and other lemon investigations have been continued by Mr. Smith, Mr. A. R. Tylor and, to some extent, by Dr. J. E. Coit. The conclusion of the whole matter is as follows:

The "wither tip" fungus is abso-

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lutely not a parasite on healthy citrus trees or fruit in California.

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This, we fully realize, does not explain the fruit spotting referred to above, many forms of die back and tree disease, "red rot," "peteca," "russeting" and other fruit blemishes of the lemon and various other important questions. Information is developing along some of these lines. The purpose of the present article is simply to allay the unnecessary alarm which has been unwittingly caused upon this subject. We, above all, do not wish to criticise or make light of the work and opinions of others or to discourage its continuance.

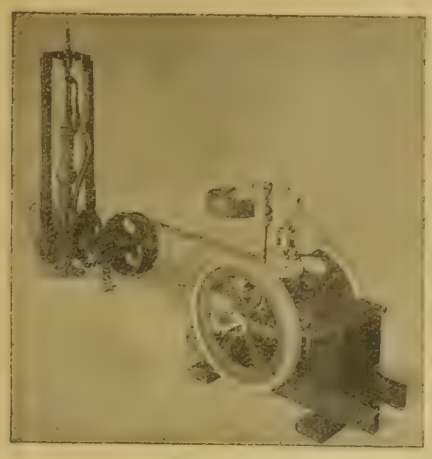
IN FLORIDA.

The citrus season of 1910-11 is over, though there are still a few grapefruit to go forward. It has been a fairly successful season, and wonderfully so, when it is considered that California had such an enormous quantity of fruit to market. If California had not started her advertising campaign a few years ago all oranges would have sold low, and we might have had a disastrous season.

We can afford to follow in the way shown by California and some advertising of Florida fruits will be undertaken next season. By a rising vote a considerable number of growers of the convention expressed themselves as willing to be assessed five cents a box for advertising purposes. There is no intention of proposing any such tax, and the exchange officials want it understood that there is not. If the exchange growers show a willingness to be taxed one-half that sum per box no doubt it will be done. This would raise a sum of over $35,000 on exchange fruit alone, It seems a pity that no progress has been made toward forming a non-partisan league of growers that would take in all factors, so that the assessment might be less, while at the same time much more money could be raised.

As it seems more than probable that the exchange will have to go it alone it would be in order to look for a distinctive brand to cover all exchange brands and readers are invited to send in their ideas. So far, the names most favorably considered are "Drinket," "Sweetheart," "Juicee," "Juicifruit," and Florafruit." It is considered essential that the name be distinctive of the juiciness of the orange, and the exchange officials believe that their campaign slogan will need to be "Drink the Juice." Send in your ideas.

We do not have to point to California any more to establish the fact that the good pack brings the money. We did have to point to California at one time. Now, there are some Florida brands that are head and shoulders above all the rest. Every association can be in the A class if it will. A fairly good equipment is needed, but what is needed most of all is a packing house foreman who knows his business, and who has not learned it all. Mr. Burton cited the case of a man whom he called a "Cracker," a man who had been packing oranges for twenty-five years. He thought at the time that he knew a great deal about packing fruit, but still he was willing to learn if he could be shown. He was shown, and now his brands are ranking right up with the leaders, and this man now acknowledges that he has lots to learn yet, and he proposes to learn it. It is really refreshing to note this man's enthusiasm and to observe the way he is always looking for points to make his force more efficient, and to do away with the rough handling of fruit. His pride has been aroused, and he proposes to be right at the top and leading if there is any way to get there.—Florida Grower.



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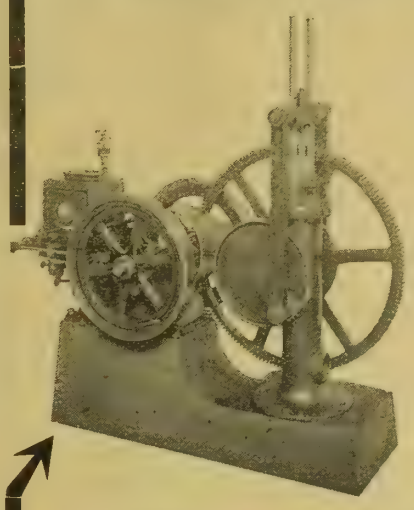

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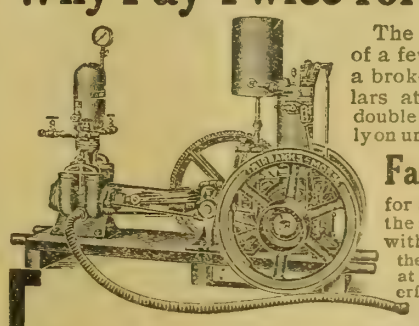

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COUNTRY LIFE CONFERENCE.

The State Country Life Commission held its third session in San Francisco recently, and completed the general outline for the program of the delegate meeting to be held at Davis Saturday, Oct. 14th. We state a delegate meeting, because at one of the former meetings held in Sacramento the Commission decided that it ought to be a delegate conference, representation as follows: One delegate with alternate to be invited from each local Grange, Farmers Union, Farmers Club, Chamber of Commerce and Board of Trade, and one each from the five districts of the State Federation of Woman's Clubs, also each county superintendent or one appointed by him. The Davis conference occurs during the short course sessions which secures reduced fares on the railway.

The point of making it a delegate conference is to cause delegates to attach more importance to it and be present. Of course the program as yet is in merest outline, but the forenoon session calls for an address by Professor Liberty H. Bailey, if he can be secured. A conference as to what is being done in redirecting rural schools of this state through the University of California, normal schools, State Superintendent of Public Instruction and County Superintendent, will be held.

Luncheon will be served in the University Farm dining hall and the afternoon program will be about the tables. The commission urges that the important points to be attained by the conference are: (a) Interest farmers in general in redirecting rural schools and especially county superintendents, teachers and trustees; (b) More supervision of rural schools, at least one supervisor of agriculture in each county within the next five years; (c) How best to utilize county trustee conventions as provided for by law of 1911, in promoting the redirection of rural schools; (d) Increased opportunity for teacher training for argiculture; (e) Induce teachers to spend (live) whole of term in school community and enter into community social activities; (f) Make school the social center of community, if other good center not provided; (g) How to better utilize men and publications of University, Normal Schools, State Superintendent's office and other public agencies; (h) Show close connection of education with economic success.

DESIRABLE EARLY PEACH.

We recently had the pleasure of sampling a new peach grown at Gilroy, which if properly exploited will, we believe, be extensively planted. It is a cling, early variety. The flesh was yellow and the blush and general appearance magnificent. The peach was sent to us by Mr. Max J. Crow of the Santa Clara Nurseries at Gilroy, and regarding it he says that "it originated as a chance seedling in this locality. The tree is now ten years old, a strong, thrifty grower, has never curled and is a regular and heavy bearer. The fruit ripened this year immediately following Alexander; a few of the new sort were picked with the last of Alexander from an adjoining tree."

A NEW PLUM.

We have received from Mrs. L. Yates of Elsinore samples of a plum which she says is a hybrid of the Wild Goose and the Kelsey and which she considers superior to either of the parents. She thinks the tree from which they were taken is the only one of its kind. The fruit is shaped like the Kelsey, is two to two and a half inches in diameter, some being a light red and others showing a greenish tinge on part of one side, soon turning to a blush which ends in a deep red on the outer side. Their eating quality is of the best.

THE VALUE OF GREEN MANURES.

The plowing under of a luxuriant green crop of alfalfa, clover, field peas or vetches, which might be harvested and sold, or used as feed, seems "against nature." Perhaps it is for this reason that it is comparatively little practiced. Nevertheless a greater gain may often come from plowing under than from harvesting.

Dr. Cyril G. Hopkins, of the Illinois Station, in comparing green manures with farm manures, makes the following significant statement: "As an average, animals digest and thus destroy two-thirds of the dry matter in the food they eat, so that one ton of clover hay plowed under will add as much humus to the soil as the manure made from three tons of clover hauled off and fed, even if all the manure is returned to the land without loss by fermentation."

Prof. Marshall, of the Colorado Agricultural College, says of the addition of green manure to the soil, that it

1. Increases its fertility by the large amount of organic matter which it acquires.

2. Increases its water-holding capacity.

3. Utilizes soluble plant food that would otherwise escape from the soil.

4. Brings plant food from the lower soil to the surface soil.

So far from being "against nature," this method is but following the lead of and improving upon the method adopted by nature in preparing the land for the occupancy of man. To form humus, she has allowed countless forms of vegetation to grow and decay unused; and in the process, half or more of the humus-forming and fertilizing elements have been lost,

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Goodyear No-Rim-Cut tires—10% oversize—cost no more than tires that rim-cut, or tires not oversize.

The sale of Goodyear No-Rim-Cut tires has multiplied six times over in the past two years. Over 600,000 have already been sold.

Sixty-four leading motor car makers have contracted with us for these tires. The demand from users is now so great that our mammoth factories run night and day.

This patented tire has become the sensation. It is saving millions of dollars to motor car owners. It is a tire that you should know.

No Hooks—No Bolts

The No-Rim-Cut tire has no hooks on the base. No tire bolts are needed to hold it on.

Into the tire base we vulcanize flat tapes made of 126 braided wires. These make the tire base unstretchable. The tire can't come off because nothing can stretch it over the rim flange. But when you remove one flange, the tire slips off like any quick-detachable tire.

This braided wire, flat tape feature is controlled by our patents. It is the only way known to make a safe hookless tire. That is why other tire makers still recommend the old-style clincher tire.

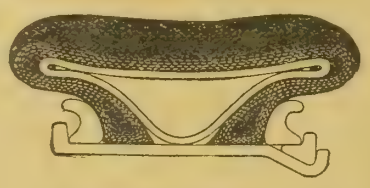
10% Oversize

The No-Rim-Cut tire, where the rim flanges flare outward, can be made 10% over the rated size and still fit the rim. And we give you that oversize without extra cost.

That means 10% more air — 10% greater carrying capacity. And that, with the average car, adds 25% to the tire mileage.

This oversize takes care of your extras—top, glass front, etc. It avoids the overloading which causes blow-outs on nine cars in ten which have skimpy tires.

These two features together—No-Rim-Cut and oversize—will under average conditions, cut tire bills in two. Yet these tires cost you nothing more than other standard tires. Do you wonder that men who know these tires insist on getting them?



The No-Rim-Cut Tire

This tire fits any standard rim. Simply reverse the removable rim flanges—that is, slip them to the opposite sides. They will then curve outward, as shown in the picture above. The tire comes against a rounded edge, and rim-cutting is made impossible.

Ordinary Clincher Tire

In the ordinary tire—the clincher tire—the removable rim flanges must be set to curve inward. They must grasp hold of the hooks in the tire base, to hold the tire on. Note how those thin flanges dig into the tire when deflated. That is the cause of rim-cutting, which may wreck a flat tire in a moment.

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(324)

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10,000 feet	⅜-inch	Standard, at	1c per foot
25,000 feet	½-inch	Standard, at	2c per foot
20,000 feet	¾-inch	Standard, at	3c per foot
36,000 feet	1-inch	Standard, at	4c per foot
20,000 feet	1¼-inch	Standard, at	5c per foot
30,000 feet	1½-inch	Standard, at	6c per foot
50,000 feet	2-inch	Standard, at	8½c per foot
10,000 feet	2½-inch	Standard, at	14c per foot
15,600 feet	3-inch	Standard, at	17c per foot
15,000 feet	3½-inch	Standard, at	19c per foot
20,000 feet	4-inch	Standard, at	24c per foot
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1,000 feet	10-inch	Diamond B. X. 40-lb. Special Casing, good as new	$1.00 per foot
1,000 feet	11⅝-inch	Casing, at	$1.00 per foot
1,000 feet	9⅝-inch	Casing, at	75c per foot
2,000 feet	7⅝-inch	Casing, at	45c per foot
0,000 feet	5⅝-inch	Casing, at	32c per foot
30,000 feet	4-inch	Casing, at	19c per foot
30,000 feet	3½-inch	Casing, at	16c per foot
20,000 feet	3¼-inch	Casing, at	15c per foot
25,000 feet	3-inch	Casing, at	14c per foot
50,000 feet	2-inch	Casing, at	6½c per foot

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10,000 feet	24-inch	Riveted Pipe, dipped, good as new	80c
10,000 feet	12-inch	Riveted Pipe, dipped, good as new, 10-guage	35c
20,000 feet	10-inch	Riveted Pipe, dipped, good as new, 12-guage	35c
10,000 feet	8-inch	Riveted Pipe, dipped, good as new, 16-guage	25c
10,000 feet	6-inch	Riveted Pipe, dipped, good as new, 16-guage	20c
10,000 feet	4-inch	Riveted Pipe, dipped, good as new, 16-guage	10c

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which are saved by plowing under at the time when those elements are most abundant in the plants.—C. R. Barns, Minnesota University Farm.

Touching upon the application of nitrate of soda to soils in the spring when the action of nitrates is too slow for best results to the tree, Prof. Lipman does not fully agree with Dr. King in the possible danger of forming black alkali in the soil. He had knowledge of one tree on which 25 pounds of nitrate of soda had been applied every year for four years. Of course, 25 pounds is an excessive application, especially when it is considered that, as Prof. Lipman said, two or at least three pounds is ample for any one year's application. In theory Dr. King may be right, but in practice California fruit growers, especially orange growers who are compelled to use some quick-acting nitrate, will continue to use nitrate of soda. Prof. Lipman's idea is, however, that caution would dictate using nitrate of soda simply as a supplement to the ordinary applications of this necessary element of plant food.

THE ALFALFA WEEVIL.

(Continued from Page 75.)

possible means of dispersion. The beetles may, like those of some of the eastern species, be washed into the tributaries of streams and, floating down, become established in alfalfa fields along their borders.

It must not be inferred from what has been said of this migration that all of the beetles leave the alfalfa fields in summer. It seems that these voyagers constitute only what might be termed the overflow. Vast numbers remain in the alfalfa fields, and while they do not eat the crown of the plant, as do the larvae or young, they gnaw off and devour the outer surface of the stem, thus skeletonizing and killing the plants, giving a field thus attacked much the appearance of having been scorched by fire. If at this time a field is mown off, or when the plants have all been destroyed, leaving no more food for them, the remainder move out of the field, evidently seeking new food supply.

Future Investigations.

The pest has become established in the midst of the alfalfa region of the West, where this is by far the most important crop grown. From what is known of the insect in Europe, and in the light of its behavior since its discovery in this country, there seems little hope for anything from it but dispersion and destruction. It has no natural enemies except frogs and toads, both of which are by far too few in numbers to restrict its ravages to the slightest degree.

The Utah Agricultural Experiment Station during the season of 1910 carried out a great number of field experiments with different methods of controlling the weevil, but none of these has so far given entirely satisfactory results. Besides, measures that are practicable in one locality may be impracticable in another.

It would seem, therefore, that the efforts of the Bureau of Entomology should be, first, to endeavor to restrict the pest as effectually and as long as possible to its present area of infestation, and, second, to use every means in its power to control it, in the meantime, within this area. In the first instance, the bureau experts will have the co-operation of the Utah Agricultural Experiment Station, as during the past year (1910), but in the very important part of this work, namely, the introduction and colonization of natural enemies, both native and foreign, the Federal authorities can treat the infested section as a whole, regardless of state boundaries, and thus work without handicap.

Quarantine between the states is, in the case of the alfalfa weevil, wholly useless on account of the agency of the railroads and winds as factors in the dispersion of the beetles. There is danger of dispersion in shipments in interstate commerce, but in the case of what is perhaps the most dangerous medium, that of baled hay, owing to the ravages of the pest, the movements of shipments are fortunately toward instead of from the infested area. As to other articles entering into interstate commerce, it would be impossible to guard against the beetles concealing themselves in almost any sort of a box, bale, or package of whatever shape, size, or nature.

The most inexpensive and practical means of controlling introductions of the pest by railroads appears to be in the close surveillance of the railroad right of way and the stamping out of incipient outbreaks as soon as discovered. This, too seems a duty likely, at least for the present, to devolve upon the Federal authorities, as nearly all of the states adjoining Utah are without the means of carrying such a plan into operation, and a year at least would be required to put into operation the legislative measures necessary to meet the situation. Therefore, the greatest assistance can be afforded by the growers of alfalfa personally, especially along railways and near towns and villages, by keeping close watch of their fields and promptly notifying the government or state authorities of the occurrence of any insect resembling this alfalfa weevil, as described and illustrated herein.

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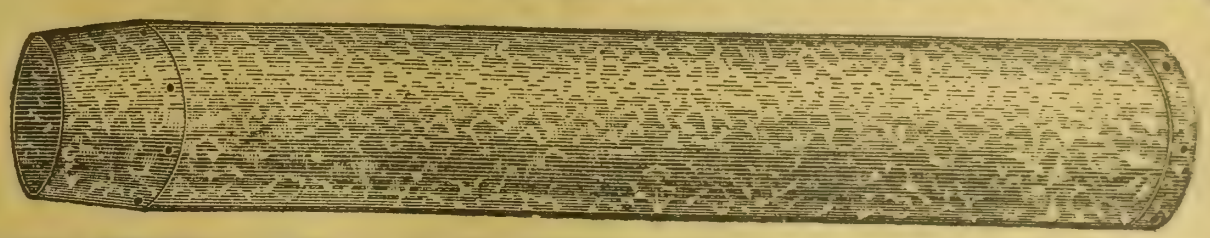

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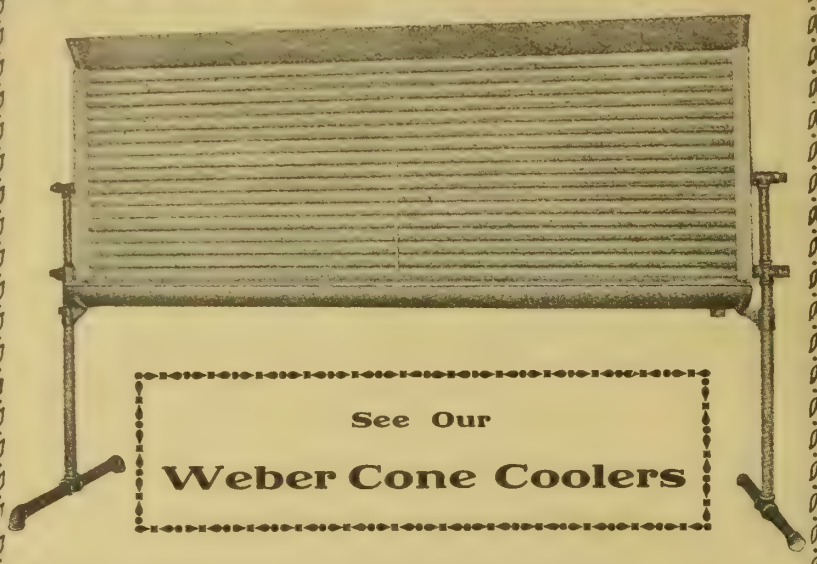

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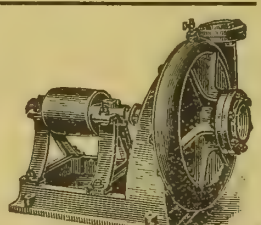

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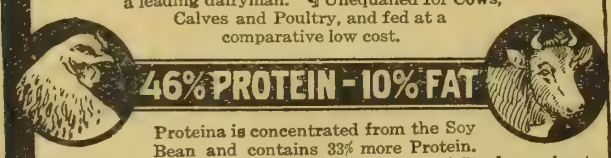

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REGISTRATION.

By Mrs. M. E. Sherman.

The value of a registration paper is in the fact that it shows the inheritance of the animal all to be in the one direction. Each individual, be it man or beast, in this world of ours has been found to be the sum of the individual ancestors that have gone before. To this is added the physical being the individual builds up for himself. Among the cows the dairyman makes them long milkers by care in handling. If he wished cows to milk three months he could readily have them the same as those that never go dry. The cow that is smooth and carries no rough bones is as easily bred as the deformed ones. It happened that some good milkers had great high backs and these were selected on account of their superior milking qualities, as the dams of the sires to head other herds. Then came the idea that because a certain number had this mark that it was a milk mark. It really was merely a mark of certain inheritance.

Marks.

I had a cow that had a round circle of white in the clear black. This mark persists and every now and then a calf in the sixth generation, is dropped showing it. Now had I thought this mark a reason for superior butter-making qualities of the old dam, it would have been easy to have bred for it. The value of a fine form is brought out by the prize ring for cattle. It is often said that the best cows as dairy animals never win in these contests that are not decided on the contents of the milk pail. The cows that do win, of course are good milkers, but when it comes to highest production nature seems to sacrifice the looks a little. Now when we attain the highest degree of skill in breeding we will have the perfect form with the greatest production in the same animal.

Value.

I have now four letters that show how little people realize the value of the registration papers of an animal until they come to sell it. These papers are as valuable as the deed of the lot you own. They are the cow's title to its rights as an animal of property, the property of being able to transmit to the calves the dairy qualities. The value will come in increased returns of butter and milk. Now if any one tells you an animal is pure bred and bred by such a breeder, ask for his papers and do not pay the price of a pure bred animal without the papers. If the animal has not its certificates it is only worth the amount of milk it will give, if a cow, and if a male, it is only worth its value in beef. If every one would recognize this fact it would cut off much knavery.

Facts.

I clipped from a paper an advertisement of a Jersey cow, four years old for sale as bred by me. I have not owned a Jersey cow since 1890, so if this cow was ever bred by me she must have been old enough to vote. Another woman writes she has a cow of my breeding, purchased in a southern county and gives a name, asking me to send her registration papers for this cow. As the name given was never used on the cow it was not possible for me to trace this animal. The writer felt abused and came back with a reply that the cow was a beautiful red and white one and the seller assured her was one of my best. I could only reply that I did not have any red and whites nor were they eligible for registration. Another trick I have had to meet is that the seller of cows will claim that the breeders agreed to, but did not furnish, the papers.

Many papers are lost by the careless people that receive them. It is not uncommon to receive letters from people declaring they never received the papers mailed to them. The return registration receipt signed is then brought out to show who has been careless.

Breeders.

I believe the longer a breeder is in the business the more careful he becomes with his books. A single mistake in an entry makes so much confusion that one learns that as soon as a calf is dropped to get its drawings and photographs, making entries in books of both and then tag the calf and get cow's description and number before the calf is twenty-four hours old. The herd books may be called for at any time by the association and must be in order. Every animal not in the herd must be accounted for and if dead, her papers are stamped with that fact. The fullest details are kept of the calves, their number, date of birth and any other facts. When you have registered animals it is necessary by law to keep a herd book, everything should be on these herd books and then the certificates should be locked in a fireproof safe, as they are titles of value.

Fads.

The association merely registers the animals and yet, while all are pure bred that are on the books, fashion has much to do with the prices. From a breeder with a reputation, cattle are worth more in selling than the same blood in animals that may have had to rough it for themselves. Yet again, an animal may be too highly bred to be of use to the ordinary dairyman. That is, her value as a dam of sires, may be too great to make her pay interest as a milk cow. It would take a mighty good cow to pay interest in milk on the prices often asked for them. One of the funniest things I know of in this way was a Mr. Newly Rich, who went to a sale of fashionable beef cows to buy an animal and brought home a Duchess cow, staked her on his lawn in front of his suburban home. She cost him some twenty odd thousand dollars and never gave a drop of milk, or dropped a calf. She soon became the torment of the neighborhood, for others preferred red roses to red cows on their lawns. The cow did not care whose lawn it was she trampled over every time she strayed from home.

Now as to cows being too good for people. I have a letter asking the price of a cow that will be guaranteed

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to give ten gallons of five per cent milk for ten months in the year. I should like to see her! She should certainly be put into a glass case and have a silken halter and a golden manger. Nothing could be too good for her use.

CALIFORNIA BERKSHIRES.

By Harry L. Murphy, Perkins, Sacramento County.

Will you kindly give me space in your valuable paper in behalf of breeders of registered hogs in California. Professor Phillips of the University Farm at Davis has made statements which need correction. In a letter of March 13th which was addressed to Mr. W. E. Wintringham, a breeder of California Tamworths, he says: "As you no doubt know, there are only a few pure bred hogs of any breed in this state." Again in another letter dated June 19th to Mr. Wintringham, the Professor again knocks California pure bred hogs: "I have spent considerable time and money the last two years running about over California trying to buy some good breeding stock for the University. Good stock of pedigrees with individuality of the different breeds cannot be purchased at any price in California because it is not there to be had."

Now he may have traveled a great deal and found no pure bred hogs, yet I may say there are at least 200 head of registered Berkshire hogs alone, within 25 miles of the State Farm. These may be seen on the following stock farms: Grapewild Stock Farm, Sunnyside Stock Farm, Four Oaks Stock Farm and in the Brighton herd of Berkshires.

I know that Prof. Phillips has bought hogs which he has personally inspected and from a part of the breeders mentioned. There are a great number of other breeders farther away than these. The Columbia's model strain of Berkshire hogs have carried off more ribbons on the Pacific Coast than any other strain, and they were all raised in California. I have a litter of pigs farrowed Jan. 3rd this year, one of which weighed 213 pounds on July 5th, not bad for 6 months and 2 days growth. Also have one sow which weighed 390 pounds July 5th when she was one year and one month old, and I am not afraid to put her up in any show ring in company with any Berkshire on earth. I have several more excellent hogs, as have many of the other breeders of pure bred Berks. I am frank to say that the breeders do not like to sell to the State Farm because it generally takes a year or more to get our pay.

Let us hope that Prof. Phillips will attend the State Fair next month and see some good California bred hogs. We believe that he will see his mistake.

While in San Luis Obispo recently we had the pleasure of a visit at the place of Miss B. A. R. Stocker, a little one-acre ranch which she has named "Little Intensity." Every foot of it is given up to intense culture, not the least intense of which are the small goat pens at the rear, in which a few fine Toggenburgs are kept to supply milk for some of the neighbors. One valuable young doe, Nasula, was near kidding time, and Miss Stocker writes us that this doe has now brought forth two valuable youngsters, one a little hornless buck with wattles, so much like a Collie puppy that she calls him "Shep." The little doe was a disappointment in that Miss Stocker has an ambition to breed to the red color as she believes it an indication of one of the best strains of the milch goat. This proves, however, to be a pale gray with dark markings. The nanny is giving 4¾ pints daily, good for a yearling.

By furnishing the pigs with plenty of pasture we can produce an even gain on a small amount of grain-food and save a lot of fertility.

Veterinary

Answers in this column by Fred G. Matthews, M. S., D. V. M., 1232 Central Ave., Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Itch.

A mare seven years old has the itch badly. She is getting in bad shape. Some places on her back and sides have become sores as a result of rubbing herself, or the medicines used.—Subscriber, Holtville.

Mix freshly slaked lime 10 ounces and sublimed sulphur 16 ounces. Add the mixture gradually to one gallon of boiling water; boil one hour, cool and pour off the clear brown liquid. Dilute with two parts of water or mix with an equal quantity of linseed oil and apply to the affected parts once every three days. Before using scrub the parts with warm water to remove all dry scabs.—F. G. M.

Collar Gall.

A mare in fine condition has a collar gall on the point of her shoulder. Pressure was removed by cutting a hole in the pad. Later she was laid off from work and the sore healed but as soon as we began to work her it returned.—Subscriber, Dey Rey.

Collar galls with thick callosities involving the skin and its substructures are difficult to remove without surgical interference. However, the patient daily use of a salve made of equal parts of oleate of mercury and lanolin rubbed into the lump may effect a cure in time. All pressure must be removed from the diseased region while the animal is working.—F. G. M.

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General Agriculture

CANE SUGAR AND BEET SUGAR FOR CANNING AND JELLY MAKING.

By G. W. Shaw, Univ. of California.

Chemists generally concede that the sugar which occurs in the sugar cane is identical from the standpoint of chemical composition and structure with that found in the sugar maple, sugar beet, and many other vegetable products. As it occurs in nature, the sugar is accompanied by various other materials dissolved in the plant juice, and it is the presence of more or less of such bodies which gives certain commercial sugar products, like molasses and maple syrup, their distinctive flavor.

Old-fashioned brown sugar, maple sugar, crude beet sugar, butternut sugar, and other similar sugars differ in appearance, flavor and palatability, owing to the character of the plant products which remain with the sugar, but from all of them it is possible to obtain pure, colorless crystals, like those called rock candy, identical in appearance, flavor and other characteristics. If the crystals are fine and separate, we have granulated sugar, while if they adhere in large masses, lump sugar, cube sugar, or loaf sugar results.

The cane sugar industry is much older than the beet-sugar industry, and since the days when the latter first assumed commercial importance there has been more or less popular discussion regarding the identity of the sugar from these two sources and regarding the relative merits for household purposes of the two sorts as they are found on the market.

It has often been said that beet sugar is not as sweet as cane sugar, notwithstanding the fact that chemists have known that, provided the two sorts of sugar are of equal degrees of fineness of granulation, and hence alike as to the ease or quickness with which a given quantity will dissolve, there is no difference in sweetness; for instance, when a spoonful is added to a cup of tea.

Another common statement is that beet sugar cannot be used successfully for canning, jelly making, and preserving. In earlier times, before methods of refining had been perfected, there may have been some warrant for such a belief, but methods of purifying beet sugar were long ago perfected and such sugar has been used for many years in this country and Europe for all household purposes.

In this connection, tests recently carried on at the California Experiment Station by G. W. Shaw, in which beet sugar and cane sugar were compared under factory and domestic conditions for preserving, are of interest. The fruits used in the tests, carried out on a commercial scale, were cherries, apricots, plums, peaches and pears. Each of these was preserved in syrup of different strength by the usual methods. In making the syrups used with the fruit some difference in the action of different grades of sugar was noted.

"The beet sugar caused the more froth in the making of syrup, but further investigation led to the conclusion that this was due to the fact that the granulation of the beet sugar was much finer than that of the cane, therefore causing more air to become entangled during the stirring than in the case of the sugar from cane. This was shown by the use of cane sugar of about the same granulation in another batch of syrup, in which the same frothing occurred as with the beet product. This has been noted in other instances, and canners are wont to count this against the beet sugar, but it is only the result of not comparing sugars of the same granulation. This difference in the action due to difference of granulation was the only apparent difference arising during the making of the syrup. This is not an essential difference between these sugars, however, as the character of the granulation is entirely dependent upon the wish of the manufacturer, the methods of boiling and granulation being the same in both cases. The sugar ordinarily used by the canners is known as dry, coarse, granulated, a grade which is not commonly made by the beet-sugar manufacturers, because there has not yet been the demand sufficient to warrant its production, but it could be made by them as readily as the ordinary granulation. After canning, the fruits were stored in cases in the ordinary way, the cans being opened from time to time to determine whether any change had taken place. Of the 2000 cans which were thus treated only six cans from the beet sugar lot and seven from the cane sugar lot spoiled during the two years, and these were evidently due to imperfect sealing of the cans, thus showing the utter lack of foundation for the idea that fruits do not keep well when preserved with beet sugar and that such sugar does not work well in the cannery."

In the household trials 40 per cent syrup was used and the fruits were put up in ordinary glass jars, 50 jars of both apricots and peaches being canned. "From these not a single can spoiled during the two-year period." The two sorts of sugar gave equally good results.

For jelly-making trials apples and currants were selected, equal quantities of juice and sugar, either beet or cane, being used and the mixture boiled until of the right consistency to jelly. "The product in each case was as clear as it is possible for jelly to be, and not the slightest difficulty was experienced in the making of it."

In connection with the experimental tests an attempt was made to trace numerous reports to the effect that fruit had been lost through the use of beet sugar in canning, but in no instance was this found to be the case, though numerous letters were received in reply to inquiries which were sent out.

"The utter folly of this idea that beet sugar cannot be used for canning purposes is further emphasized by the fact that practically all the sugar used in Germany and France for the purpose of canning and preserving is from the beet, and for many years American refined beet sugar was used without complaint in this country, because the mass of the people were not aware that it was derived from the beet. This sugar was brought here as raw sugar from Europe and refined at American refineries."

Professor Shaw concludes from this experimental data and other evidence that under both commercial and household conditions beet sugar and cane sugar give equally satisfactory results for canning fruit and also for jelly making.

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While in Nevada recently I had occasion to drink out of one of your South African Water Bags. Water from the bag certainly tastes good on the desert. We used one of your 2½ gallon bags and *the water remained cool all day, even though the temperature was over 100 in the shade*, and in the morning I found the water sparkling and as cold as ice water. It certainly is a boon to those living in the arid regions.

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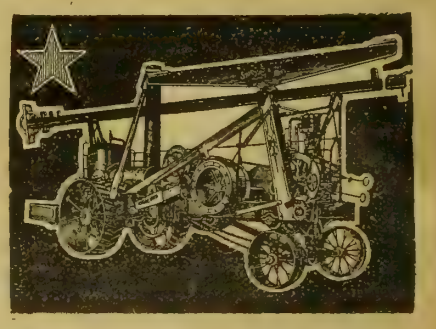

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SIXTH INTERNATIONAL DRY-FARMING CONGRESS.

By G. W. Shaw, Univ. of California.

The writer, as a member of the executive committee, desires to call special attention to the meeting of the International Dry Farming Congress, to be held at Colorado Springs, Colo., October 16-20, inclusive. Inasmuch as a large proportion of the arable land of California must always be farmed under conditions of limited rainfall, it is extremely important that there should be a good representation from this state at the next congress. The movement is an international one and all foreign countries, having similar conditions, will be well represented by official government delegates.

Every country in the world has a certain percentage of agricultural acreage for which there is either limited rainfall or limited moisture in other forms. To solve these problems is the work of this great co-operative congress, and you are urged to consider this convention of the utmost commercial and social importance to your country, commonwealth and associates. The program will be devoted to discussing plans for rapid enlargement of the necessary agricultural propaganda; co-operative work between nation, state and farmer in developing a higher type of methods and production; exchanging reports between nations, states and farmers, as to methods of overcoming problems in the conservation of moisture, soil fertility and of breeding more drouth resisting plants and fruits; studying the rebuilding of soils and overcoming of diseases of plant life, trees and soils, enlargement of experimental methods; national and state legislation affecting the farmer from the standpoint of development and methods; immigration; the interests of the homesteader, etc.

The program will be so arranged that delegates may have ample opportunity to visit the exposition and other attractions. At least one evening will be devoted to amusement and two evenings to joint sessions of the Dry Farming Congress and the Congress of Farm Women. The international section will be addressed by scientists from many nations.

The live issues of the day in the agricultural world will be discussed by leading thinkers and experimentalists, and no feature of practical farming will be omitted in the arrangement of the sessions.

Technical matters will be treated in reports made to the congress by special committees appointed by the president of the congress to carry on investigations, and to formulate future plans and advice for the benefit of members of this congress. Institute sessions will be arranged for in charge of various states each day.

An educational magazine is issued once each month by the Dry Farming Congress. Hundreds of valuable articles by the world experts, by practical farmers and special writers are published throughout the year and reports are given from hundreds of farmers through the statistical department. This magazine is sent to any address for one dollar per year.

This is one of the world's great movements, having in view the betterment of agricultural conditions, and California should be well represented.

The San Jose Grange discussed the fruit condition at its last meeting, and it was reported that some sales of apricots for as high as $60 had been made to canners. Seventeen cents for dried cots is already quoted.

A SURE METHOD OF ERADICATING JOHNSON GRASS.

Mr. C. R. McBride of Solano County, sends out the following method of Johnson grass eradication:

When a man who has a piece of land infested with Johnson grass is told that he can get rid of the pest in one year at a reasonable expense, he is liable to disbelieve the statement. It is true, nevertheless, and absolutely so, excepting, of course, infestations along creek banks and other trying situations where the pest will have to be handled in a different manner than the one under discussion.

The eradication of Johnson grass is based upon the following facts:

1. Plants must have light.
2. Plants must have food from the air, which is taken in the form of carbon dioxide.
3. It is the purpose of all plants to reproduce themselves.

Keep the plant (Johnson grass) from the light and air, and prevent it from seeding, and it will die.

The method is as follows: Plow the infested piece in the middle or last of May, depending on the time that the regular spring plowing was done. Plow again in the middle or last of June. The land should be harrowed after each plowing. The purpose of these plowings is to keep the plant from light and air and to keep the soil loose for the final plowing which should be done in the middle of August. This month is the hottest and drying time of the year and is the most effective time to disturb the roots. It is also the time of ripened seeds, if the plant is let alone, the time that the roots go into the dormant condition to rest, their purpose being accomplished. But due to the two previous plowings the roots will not be dormant at this time but will be striving to reproduce seed, will be overworked and very susceptible to a disturbance at this time.

The foregoing statements which I have made are based upon the practical experience of Mr. G. W. Long. By this method he eradicated two acres of Johnson grass in a vineyard in one year and is willing and able to prove it to any one who is interested enough to inquire. The cost will not be over $8 per acre in an orchard or in vacant land, although in a vineyard it will be a little more.

EUCALYPTUS PLANTING.

Giving information as to the planting of eucalyptus trees in San Luis Obispo County, Mr. George F. Bigger of Nipomo writes:

"During the past two years the planting of eucalyptus trees, blue gums, has been very extensive in this section. More than 7000 acres in tracts of from 40 to 1000 acres have been planted. These are situated between Oceano and Nipomo, and indications are that there will be as much more planted during the next two years. The rainfall here is about 30 inches, the soil sandy, and the moisture from the heavy fogs, makes this an ideal situation for the blue gum. Trees four years and four months old show a diameter of 11 inches one foot from the ground, and trees one year and four months old are 4½ inches in diameter. The usual distance apart is 8 by 8."

The Lemon Men's Club surprised one of its members, Mr. A. F. Call, of Corona, with a check for $6,000 as a token of appreciation because of his magnificent fight in the lemon rate case before the Interstate Commerce Commission.

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The proceedings of the 1910 session of the Farmers National Congress held at Lincoln, Nebraska, now being mailed, contains the important addresses on agricultural topics. The next session will be held at Columbus, Ohio, beginning October 12th.

CONTINUE THE DEMONSTRATION TRAIN.

Prof. Warren T. Clarke, in charge of the university extension work through the demonstration train service, has the matter of the coming year's train under advisement. It has been found that the demonstration work has drawn heavily from the teaching force of the agricultural department, yet the work accomplished has been of great importance and the Southern Pacific still stands ready to continue the train service if the university people can join in it, so that it is probable it will be taken up again this fall. The first train usually starts through the Sacramento valley during the last of October or the first of November.

Prof. Clarke says a number of changes are in contemplation, if the service is continued. Each year it has been extended, until last year when the train reached its limit, as it required ten or twelve coaches to accommodate the immense number of exhibits prepared. Probably the work will be more specialized and instead of encouraging school children and an otherwise large attendance, the effort will be to encourage only those to attend who will gather a fund of information. To that end, instead of filling the cars with exhibits, and the crowd passing through quickly, merely gazing at the mass of exhibits, only about half of each car may be filled with exhibits and the rest will be provided with seats so that those interested may be seated and listen to general lectures, the exhibits being used to enforce the lessons. In addition, a longer stop will be made in each community, giving more opportunity for real study. The management feels that the trooping of school children through the cars has reached almost an abuse.

WHAT DO YOU THINK OF THIS?

We have received a pamphlet giving description of a new and useful system of irrigation through producing artificial rain. It is declared to be indispensable to gardeners, farmers, and others. It is patented in the United States, England and foreign countries. The following statements accompany the pamphlet:

"My artificial rain system has demonstrated by practical tests in the Argentine Republic during several years, that by its use, crops may be doubled, and with my electrified water as fertilizer, they may be trebled. The ravages by locusts can be prevented, and these pests completely destroyed by the use of my invention. Crops cannot be damaged by frosts where my system is in use."

Unfortunately the experiments have all been performed in Argentina, which is too far away for verification of the statements made. The electrified water as food and the absolute prevention of frost certainly looks good. We may yet be raising bananas at the north pole.

INTERNATIONAL INSTITUTE OF AGRICULTURE.

The results accomplished by the International Institute of Agriculture, particularly through its bulletins of statistics, call for still better service, and this bulletin which has heretofore appeared monthly, will now issue an extra on the 15th of each month.

In the first of these mid-month supplements we note that the area of wheat to be harvested in France is 95.9 per cent of normal, while in Canada it is 113 per cent. The United States is also above normal, according to this bulletin, by 9.9 per cent. In Hungary, Italy and Sweden an average crop is expected. The indications the world over as to barley are that the condition of that cereal is good.

This Institute has not had the hearty support in this country which it should, but we believe that this great work which had its inception in the brain of a Californian will ultimately make good and our Department of Agriculture will make a strong stand in its favor.

A new bill has been introduced to the parliament of the Danish government which is intended to give a stronger position to the co-operative movements of that country which has been the most advanced of any in agricultural co-operation. There are now more than 3000 agricultural co-operative societies in that little country the total population of which is less than 2,500,000. Through these organizations, meat, bacon, butter and eggs have become articles of considerable export, increasing in value from 30,000,000 crowns a few years ago to more than 300,000,000. Heretofore there has been no special legislation touching upon co-operation excepting favoring formation of cattle breeding societies. The bill was introduced not so much because of actual need as to make the formation of co-operative organizations more effective; it also has to do with limiting liability.

"A farmer for every forty." Here is the slogan in certain sections of Michigan. Plans are being made for a great land and apple show to be held at Grand Rapids in November. It is proposed to make this one of the finest exhibitions of apples ever shown. One of the Michigan people is to attend the apple show at Watsonville to learn of what a big apple show consists. In addition to the displays of fruit, there will be lectures on scientific fruit growing and exhibits by manufacturers of orchard implements.

The management of the American Exposiiton of Dry Farming Products which will be held in connection with the sixth annual session of the Dry Farming Congress at Colorado Springs in October, is offering a long list of premiums for all kinds of products handled under dry farming methods. A premium to be named later will be given for the best collective exhibition of products grown on dry land in 1911 by a graduate, class of 1910, from the agricultural colleges of Arizona, California, or any state of the arid West.

Our readers of the live stock page will be pleased to see Mrs. Sherman's article after the long rest which she has had while in a San Francisco hospital. She is not yet fully restored to health but sufficiently to take up her Cultivator work again, and while she may not be regular for a time, will at least be with us occasionally and will be able to answer inquiries as to the live stock industry and also give information on vineyard questions.

President Stahl of the Farmers' National Congress is in receipt of a letter from the President's secretary, in which it is stated that "The President is strongly in favor of the establishment of a general parcels post, and will recommend the same without qualifications in his next message."

The elm is the most popular shade tree in Sacramento County.

The annual report of the California Development Board contains a great fund of information as to the productions of the state, statistics showing wonderful growth and making comparisons with other sections, with articles by such writers as Gen. N. P. Chipman, Samuel Fortier, John P. Irish and others. In the back is an excellent folder map of the state, to a certain extent a repetition of those appearing in former reports, one feature of which is a striking comparison of the size of California with certain Eastern states. One defect of this map, however, is that one of the counties of the state is ignored by oversight, that is, in the list of counties sending out horticultural products; in melons Imperial county is not mentioned. Any county which can send out a solid trainload of melons a mile and a half long, or during the season ship a total of two thousand five hundred cars of cantaloupes, is surely worthy of mention amongst the melon counties. We hope that by another year Imperial's importance will be recognized.

The special election held in Imperial to determine as to handling irrigation matters as an incorporation under the Wright-Bridgford Act resulted in overwhelming victory for the proposition. The vote stood 1,304 for the irrigation district and 360 against it. The one town of Imperial was almost unanimous against it, for outside of that place only 87 opposing votes were cast. The directors and officers for the first year are: First district, Fritz Kloke, of Calexico; second district, W. O. Hamilton, of El Centro; third district, H. L. Peck, of Imperial; fourth district, I. C. Pound, of Brawley; fifth district, P. N. Ferguson, of Holtville; for assessor, H. L. Barker, of El Centro; for treasurer, J. S. Brown, of El Centro; for tax collector, C. W. Collins, of El Centro.

Olive oil manufacturers of California missed the opportunity of their lives in not making a magnificent display of California oil during the recent convention of the American Medical Association in the city of Los Angeles. No such opportunity for publicity will be offered among people who are able to increase its use. We do not wish to give the idea that olive oil is of value only as a medicine or in case of sickness or when recommended by doctors, but that offers one opportunity for increasing its consumption which should have been grasped. So far as we know, not a single bottle of oil was exhibited, and the physicians returned to the East with no more knowledge of California oil and its purity than when they came.

The Los Angeles County Highway Commission, which has had to do with the making of the $3,500,000 worth of good roads, has issued an elaborate semi-annual report. It gives particulars as to methods of constructing the 307 miles of macadam highway authorized by the bond issue. The bonds were issued in July of 1908, but, owing to the difficulties of such extensive work, only about one-half of this mileage has been completed up to this time. Los Angeles county proposes having the finest roads in the world if money can procure them.

According to the last census, Colorado has 31,000,000 cattle, 27,000,000 horses and colts, and less than 2,000,000 mules. The total number of farms in the state is 45,839.

Agricultural News Notes of the Pacific Coast

Northern California

The arceage of almonds in Butte County was doubled this year.

Winters, Yolo County, has already shipped 200 cars of fresh fruit.

Vaca Valley claims the earliest shipments of grapes from the Sacramento Valley.

A Colusa farmer claims $2,000 net profit from ten acres under intensive cultivation.

The owners of 4,600 acres of land near Suisun will organize a reclamation district.

Farmers at Sebastopol, Sonoma County, are discussing the advantages of better roads.

A poultryman at Willows, Glenn County, claims a $10 a day profit from 1,600 laying hens.

The plant introduction garden at Chico has grown this season over 400 varieties of grain.

The Inter-County Good Roads Association was recently organized at Vallejo, Solano County.

The Gold Ridge section proposes to make its greatest show at the coming Gravenstein Apple Exhibit.

The Country Life Commission has called for a general delegate conference to be held at Davis October 14.

A Lake County farmer has invented a "submarine saw" for eradicating tules and other noxious water plants.

Farmers of Lakeport, Lake County, are discussing the advantages to that section of more perfect irrigation methods.

The Sonoma County Pomona Grange will hold its regular quarterly session at Santa Rosa this week. It will be an open session.

The Irrigation Districts Association recently met in Oakdale and discussed needs of districts formed under the Wright-Bridgford Act.

The California Debris Commission reports improvement in navigation and flood conditions of the Sacramento and San Joaquin Valleys.

Winters, Yolo County, now claims the record prize for a car of fresh deciduous fruit. The car was made of assorted peaches, plums and apricots and sold for $2,602.

The Sebastopol Apple Show Association, which opens its great exhibit August 14, will house part of its exhibit in the biggest tent in California. It is 110 by 260 feet.

On July 15 a fruit train out of Sacramento over the Western Pacific made Salt Lake City, a distance of 782 miles, in 35 hours. This was an average of 23 miles per hour.

An instructor at the State University is preparing to organize the teachers and children of the state to take up garden work. The Junior Argiculturist will be issued in aid of the movement.

Some stock breeders of the Sacramento Valley have complained because of the fact that the State University Farm at Davis has purchased pure bred stock for the uses of the school from outside the state. Superintendent Anderson says that while some stock has been purchased on the outside, more than 85 per cent of the funds have been placed with California live stock people.

Central California

Fresno ships its first car of fresh fruits this week.

Monterey has just opened a magnificent new library building.

Some Kings County vineyards are showing the attacks of erinose.

Merced County is planting more extensively of alfalfa than ever before.

Boys at Kerman have been arrested and fined fifty dollars for swiping watermelons.

Raisin growers are still firmer in their demand for a long price on the coming output.

The orange planting section near Exeter has been largely extended during the past season.

Fresno grape growers are discussing methods of securing sufficient help to market the coming crop.

The Kings County dairymens organization has recommended the appointment of a dairy inspector.

The Fresno Chamber of Commerce has passed resolutions endorsing the reciprocity agreement with Canada.

To handle the grain of Orris, Ducor, Terra Bella and Lois, Tulare County, there have been shipped 180,000 sacks.

The number of private pumping plants for irrigation has greatly increased in Fresno County in the last year.

The Kings County dairymen have organized for the sake of co-operating in producing better products and securing better prices.

The first annual show of the Santa Cruz County Poultry and Pet Stock Association was pulled off last week. Over 1,000 birds were entered.

Several grape pickers and packers, the latter mostly girls, have gone from Fresno to the Imperial Valley to assist in handling the season's output.

Turlock is planning for a melon carnival, at which cash prizes will be offered for the best productions of the Turlock Irrigation District. The dates are August 24-25.

Orange groves in the foothills of eastern Fresno County have used less water in irrigation this year than previously. More conservation is reported as the reason.

Sanger, Fresno County, has an alfalfa stalk which has grown seven feet and eleven inches high and has an extreme spread upon the ground of thirteen feet and nine inches.

A fruit grower at Del Rey, Fresno County, is experimenting with a fruit which he calls turanji, introduced from India, said to furnish a product equal to the candied citron.

A corps of students has been engaged in collecting specimens of mammals in the Sacramento Valley. Work was begun at Tracy and was carried on as far south as Bakersfield.

A conference has been called of irrigators taking water from the Tule River to meet at Porterville. The idea is to secure a universal agreement as to use of the waters of the river.

Raisin Shippers at Dinuba report the receiving of circulars from Eastern trade containing a veiled threat of boycott of California fruits if the producers see fit to take advantage of the favorable season to secure full prices.

Southern California

Orange County estimates 1,200 tons of dried apricots.

San Diego County is expending $1,250,000 on good roads.

San Diego has aspirations to be a great meat packing center.

Imperial Valley will make a great display of cotton at the coming state fair.

Carpinteria, Santa Barbara County, reports the largest walnut crop in years.

Orange County anticipates $1,800,000 from its sugar beet output this season.

Imperial Valley's acreage of cotton is about 16,000, and 10,000 bales are expected.

Wintersburg, Orange County, has already planted more than half of its celery crop.

The daily shipment of Valencia oranges is greater than ever before at this season.

The flow of water through the Imperial Valley canals is far greater than last year this date.

Apricot buyers are passing the word to the growers that they must dry their fruit "very dry."

The raising of bamboo for paper pulp has been suggested as desirable for the Imperial Valley.

Santa Barbara County's bean growers are discussing the advisability of joining the Ventura County association.

The plowing out of Ventura County's beets began last week near Oxnard. The factory started on Saturday morning.

The famous Warner Ranch in San Diego County, consisting of 60,000 acres, was recently sold for an even million dollars.

The Southern California sugar factory at Santa Ana began its third campaign last Thursday. About 65,000 tons will be sliced.

Ventura County apricot growers complain because of the very uneven ripening of the fruit. This will extend the season much later.

Ventura County's apricot output will be rather heavier than anticipated. The season was so late that the dry yards are yet busy spots.

Orange County's walnuts are in excellent condition, one of the biggest crops ever, and with promise of good prices the walnut growers are happy.

The eastern representative of the Lima Bean Growers Association has been in California, inspecting conditions and preparing for a big output this fall.

San Diego's exposition ground breaking ceremonies drew great crowds to that city last week, and an auspicious opening of her great 1915 show was held.

The contract for the sugar factory on the Irvine Ranch, Los Angeles County, has been let to a Cincinnati concern. The capacity of the factory will be 600 tons.

Imperial County feels greatly elated over the almost unanimous decision of irrigators to establish a Wright irrigation district for the control of the waters before handled by the California Development Company.

The Coast

Klamath Falls, Oregon, is planning for a water carnival.

Oregon flax is being exported to the linen mills of Europe.

Oregon shows a material development of the small farm.

Pear producers at Grants Pass, Oregon, are now receiving $1.58 per box.

Elgin, Oregon, proposes to devote much of its grain lands to apple culture.

"The wheat crop is almost perfect" is the report from Walla Walla, Washington.

Desert sections near Phoenix, Arizona, are being charted as an aid to travelers.

The Oregon State Medical Association is making a fight upon tuberculous cows of that state.

Eastern Washington will have a bumper wheat crop, even exceeding the big one of last year.

The cherry crop at Hood River, Oregon, is reported as having been exceptionally fine this season.

San Simon, Arizona, has a fine flow of water from artesian wells in the neighborhood of 500 feet deep.

Farmers at Ephrata, Washington, have subscribed $1,000 for preliminary surveys for a big irrigating canal.

A Wilcox County, Arizona, alfalfa grower will take 50 tons of alfalfa from 18 acres which was planted last fall.

One peach grower at Yakima, Washington, has used 18,000 feet of lumber this year as props for the overloaded branches.

The County Commissioners of Harney County, Oregon, have purchased 200 acres of land for an agricultural experiment station.

A "blue rose" much advertised at Pendleton, Oregon, has proved a disappointment to those who expected great returns from it.

Ranchers at Klamath Falls, Oregon, have decided not to wait on the reclamation service, but to handle their own irrigation problem.

United States land office at Burns, Oregon, has thrown open for settlement several thousand acres of government land in that district.

A permanent reduction on freight tariffs between Eastern Washington and Puget Sound points has been announced by the Great Northern.

The fruit growers association at Eugene, Oregon, is handling three cars of cherries daily. They are put in pickle for shipment to eastern confectioners.

Grain lands on the Lewiston-Clarkston project on the Washington side of the Snake River will have a record breaking grain crop this year, reported to be over 12,000,000 bushels.

Farmers of the Yuma Valley are having trouble with the city council of Yuma because of an ordinance compelling the farmer who would sell his own produce to take out a peddler's license.

The order of Elks of Phoenix, Arizona, recently made a visit to the East, and took back of the products of Arizona a feast of ostrich eggs to convince the Easterners that Arizona does things in a big way.

Pacific Egg Food

Makes hens lay; none better.
Good for molting time, too.

Special prices: 90 lb. sack, $1.75; 75 lb. sack, $1.50; ton, $37.50

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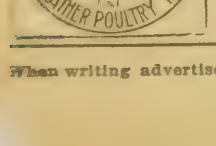

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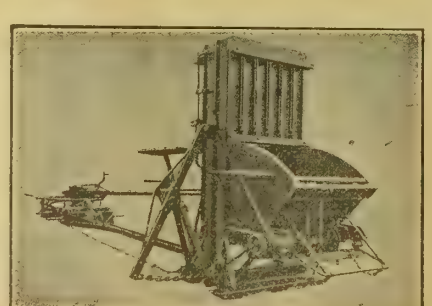

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Profit in the Poultry Yard

Practical poultry people who may have ideas from their experience as to methods of feeding and housing and general care of poultry will convey a favor upon the Cultivator and its circle of readers by sending in concise accounts. Mrs. Basley is always willing to answer queries which with the experience of others should make this a most valuable feature in poultry life on the Coast. Opinions or matters of a personal nature should be omitted, but a concise statement of facts is always valuable.

DUCKS.

Mrs. A. Basley.

A "Constant Reader" complains that ducks are being neglected in these columns and asks "Are not ducks more profitable than chickens?" and "What do you consider the best breed of ducks?"

Ducks have their own place in fowldom as they have in the market. They are not as popular for the table as chickens simply because we have not acquired the same taste for them, consequently in most places they will not be as popular as chickens.

Ducks should be properly cared for or not at all. They are easily raised in this climate, they have no diseases, never have roup, and are not troubled with lice or mites after they get mature plumage. They are easy to raise provided they have shade from the sun and clean water always before them, in a vessel sufficiently deep for them to immerse their nostrils. Ducks rinse out their nostrils many times a day and if unable to do this the nostrils seem to dry and a mucus forms at the top of the nostril and hardens and sometimes forms an abscess. The eyes close up, the duck becomes blind, cannot see the food and dies.

I have had letters from persons in trouble, thinking their ducks had roup. To one I telephoned "Ducks never have roup. Give yours a deep vessel with clean water and they will cure themselves." To another whose ducks were in a very bad condition I wrote that she would have to oil a feather and pass it carefully up the nostril so as to soften the mucus which had dried and hardened and to give the ducks a vessel deep enough so they can rinse out their nostrils. She wrote me a most grateful letter thanking me and expressing her great surprise that such a very little thing as that should make all the difference between failure and success. The little things count in this business.

Some people let chickens and ducks run together, feed together and house together. It is bad for both (and worse for turkeys). Ducks foul the water and this makes chickens sick. The chick feed of whole grain is unsuitable for ducks and they die of indigestion. One novice feeds wheat as long as the duck survives, another killed a first prize winner (imported) with whole corn, and a third lets the little fellows snatch a bite from the chickens provided they are quick enough. The result can easily be imagined, little stunted, hump-backed runts, whose beaks and feet have far outstripped their bodies in growth. There is neither profit nor pleasure in raising ducks by any such haphazard method. Aim at perfection and do not be satisfied until it is reached. It is just as easy to raise good ducks as good chickens, in fact, I think it is a little easier when one knows how.

Young ducks are large feeders but are cheaper to feed than chickens in proportion to their growth and weight. Whole grain should never be fed to young ducks. Ground grain is better for both old and young. Cooked vegetables thickened with equal parts of bran and corn meal is an excellent duck feed. If potatoes are used the corn meal and bran should be well moistened before adding to the potatoes. When dry meal is mixed with cooked potatoes a tough gummy mass is the result. The ducks may try to eat it, but a great part is shaken out of their mouths and wasted. The more watery vegetables when boiled, such as turnips, beets, cabbage or cut alfalfa scalded do not contain starch, like potatoes, and therefore no water need be used in mixing. Green food raw is a prime factor in duck feeding, as is also bran. Ducks require more green food than hens, and of course, alfalfa is about the best green food they can have. Water vessels should be scalded every day and fresh water given at every meal. Coarse sand or grit (chick size) should be before them always, also crushed clam shell when they are laying. I have found that nothing equals the small clams, crushed, to make ducks lay. These and the grit should be easily accessible but not mixed with the food except in the case of very small ducklings when it is advisable to add a little sand to the food. Ducks should be fed all they will eat, they will not overeat if the food is a properly balanced ration. A thin duck will never lay; they must be plump, and well fed. Ducks become very fond of alfalfa meal after using it a short time and it is excellent for them. A little salt may be added to the food occasionally.

Each variety of duck has its admirers. Undoubtedly the Pekin duck is the most popular breed in the large duck ranches of the East where thousands of them are fattened and turned off every season. Though the Pekin ducks may not merit all that is claimed for them by their enthusiastic admirers, it is certain that the duck business could not have attained its present proportions without the Pekin and that as a market duck in this country this breed takes the lead.

Personally I prefer the Indian Runners on account of their wonderful laying qualities. I had ten ducks of this variety that laid 2331 eggs in one year. I think the climate of California being semitropic, so nearly resembles that of India where they originated, that they lay better here than in England or the eastern states where the colder winter slightly affects the laying. The eggs of the Indian Runner are ivory white in color, much resembling Minorca eggs, very delicate in flavor. In England their eggs are greatly in demand in the sanitariums on account of their delicate flavor, richness and nutritive value and their absolute freedom from tuberculosis taint. The flesh of the Indian Runner is finely grained, juicy and resembles in flavor the much extolled canvasback duck.

There is a new duck which is at present hoping to quack its way into the American Standard of Perfection. It is the Buff Orpington duck. It is a breed of Mr. William Cook's making. He named them as he did the Orpington hens, after his own place in Kent, England. The color of these ducks is a soft shade of buff, the drakes having rich brown heads. The Buff Orpington has a good deal of the Indian

Runner blood in it, hence its fine laying qualities. A friend who has them straight from England writes that they even surpass Indian Runners. Hers commenced laying on their arrival in October last and have never ceased, eight ducks laying seven or eight eggs every day. These ducks weigh a pound and a half more than the Indian Runners, are larger and have a big amount of breast meat. They mature very early and are one of the best market birds, and Mr. Cook claims that they are better layers than any of the duck family.

The "Quackless" duck or the Muscovy is not largely bred in this country. They do not quack, but hiss like a snake and are pugnacious and ill-tempered. When young they are very quick and will climb up a wire fence with the greatest agility and run away as fast as quail. The middle toe has a hooked claw enabling them to climb and although they have webbed feet they are not at home in water, but seem to prefer dry land. When mature they are very strong on the wing, will easily fly over the barn and prefer to roost on the top of the house or barn, quite unlike other varieties of duck. They are natives of South America. There are two varieties, the white and the black and white. The males are much larger than the females. I had a drake that weighed fourteen pounds. They are very good sitters and the eggs take thirty-five days to hatch. Their peculiarity is that both sexes have caruncles at the base of the bill, these become larger every year, giving them a vulture-like appearance. They are of a different species from other ducks and it has always been asserted that they will not interbreed with any of our domestic ducks or with geese.

"The love of birds and trees is one of the healthiest emotions of the human heart. It may well be cultivated. There is no more innocent and no more gratifying source of enjoyment than intelligent interest in the beauties of nature. Learn to know the calls and plumage of our birds, the varying foliage of our trees; grow to love the quiet places where they may best be studied, and you will be happier and better citizens of our great state."—Governor Johnson.

Note the hens that have been especially successful in brooding and rearing chickens; don't sell them, even if not very great layers. Give the eggs procured from breeders to such hens; they will save enough chicks to pay for their feed through the winter.

Ducks can be successfully raised by feeding just a little wet corn meal five times a day, a little water five times a day, with grit and grass where they can get plenty. It is easier to overfeed than to not feed enough. A pint of corn meal a day is enough for twenty little ducks.

An observant swine feeder says the sows fatten easier and quicker, than the males, and isn't it so with poultry? Therefore the greater need of separating the pullets from the cockerels as soon as the sex can be told.

Scaly legs is a troublesome and loathsome disease, and is contagious. A mixture of kerosene oil, lard and carbolic acid if rubbed on the legs will soon cure this malady.

In the last twenty years imports of poultry to Germany have increased from $500,000 yearly, to $50,000,000 for the past year; this seems almost incredible.

POULTRY ITEMS.

No food nor nourishment about charcoal—not a bit, but it is a corrector that helps the chicks' digestion.

If you must feed soft food, for mercy sake provide a small trough in which to feed it. It becomes a starter of disease when thrown on the ground.

It is all right enough to rear turkeys with the chicken hen if the fool hen wouldn't wean them so early. Then lice are always more troublesome than with turkey hens.

Merely as a suggestion look after the cleaning and ventilating of the brooders and brood coops. As the chicks grow older it is essential to clean more often as droppings soon accumulate. Cleanliness and plenty of fresh air are great helps in developing the chicks and keeping them thriving and prospering.

Have you purchased a spray pump yet? You need one if lice are giving you trouble. One stands a poor show of seeing much pleasure or profit in poultry unless the lice pest is under control. It is very easy to stunt the growth of a flock of chicks by a little carelessness in looking after the lice question. Once the tiny mites get right numerous you have got trouble on your hands. Insect powder they don't mind a bit. Have to fight these torments by spraying or painting with a liquid lice killer. Strong salt water applied hot, or boiling suds are good remedies.—Successful Farming.

During hot weather shade should be provided for the young chicks, or the heat will kill them. If there are no trees, then shade in the shape of sheds should be provided, so the chicks can go in and out at will.

Get all of the manure out onto the land where it can earn something for you. It is useless in the yard.

A GOOD RECORD.

I have eight hens that were a year old June 15th and had laid to that date 1123 eggs, or three over 140 each. They began laying Thanksgiving week. In March, April and May they laid, respectively, 199, 196 and 202. I know this is a pretty good record, but I would like to know how good it is and if it is unusually good. Since April 15th they have been in a chicken yard with sixty young pullets, which I feared would affect their laying, but I guess it did not.—E. L. Shea, El Cajon.

* * *

The above is a good record and Mr. Shea may well have satisfaction in it. We will be glad to receive from him statement as to methods of feeding and care of this flock of birds. We doubt not there are many year-old hens which during their entire second year have made no better record.

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We Have Just Finished Inventory, and Find Ourselves Overstocked on Goods Listed Under this Ad. Many of

These Prices Will Save You 50 per cent

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Coffee Pots—No. 70—5 quart	$0.39	Deep Stew Pans—No. 3—3 quart	.17
Coffee Pots—No. 15—2 quart	.26	Milk Pans—No. 6—5 quart	.15
Tea Pots—No. 30—3½ quart	.29	Quart Measures	.11
Tea Kettles—No. 6—4 quart	.36	Sink Strainer—No. 25	.12
Berlin Kettles—No. 8—7 quart	.44	Pan Cake Turners	.06
Preserving Kettles—No. 320—10 quart	.31	Basting Spoons—10 inch	.04
Lipped Sauce Pan—No. 32—10 quart	.36	Skimmers—Flat, with 14 inch handle	.07
Straight Buckets—No. 2—2 quart, with cover	.19	Mixing Bowls—No. 18, 2½ quart	.12
Preserving Kettles—No. 260—6 quart	.20	Cake Pans—Scollaped	.09
Preserving Kettles—No. 200—3 quart	.14	Bread Pans—Oblong	.12
Deep Pudding Pans—No. 1—1½ quart	.07	Wash Basins—No. 28—12 inch	.11
Deep Pudding Pans—No. 2—2½ quart	.09	Foot or Baby Tubs—18x14x8 inches	.54
Lipped Sauce Pans—No. 16—2 quart	.11		

HARDWARE

Matting Tacks, double jointed, doz. pkgs	.20	Asbestos Stove Mats	3 for .10
Stove Pipe—5 inch, 2 joints	.25	Stove Pipe Rings—6 inch	3 for .10
Stove Pipe—6 inch, 2 joints	.27	Flue Stoppers	2 for .08
Hunter Flour Sifters	.11	Windsor Lanterns—No. 2 Cold Blast	.61

WOODENWARE

Daisy Mops—With handle	.18	Tooth Brushes—No. 38777, genuine bristle	.05
Stove Brushes—10 inch, block	.07	Tooth Brushes—50 cent quality, No. 51	.29
Scrub Brushes—10 inch, solid back	.07	Corn Poppers—1 quart	.11
Nail or Hand Brushes	2 for .07	Joker Mouse Traps	3 for .10
Horse Brushes—No. 315—Leather back	.12	Joker Rat Traps—Strong spring	.07
Hoof Brushes—Rice Root	.14	Turkey Dusters—100 feathers, 18 inch	.59
Shoe Brushes—Dauber and handle	.16		

MISCELLANEOUS

Writing Tablets—No. 431—Note size	doz. .40	Mason Jars—Quarts	doz. .56
Japanese Crepe Napkins, plain white	1000 for .84	Mason Jars—Half gallons	doz. .83
Straw Wrist Cuffs, for field workers	3 pr. .10	Jar Rubbers—Best quality	12 doz. for .50
Yankee Lunch Boxes—Strap handle	2 for .14	Toilet Paper, flat pkgs.	½ doz. .30
Jelly Tumblers—With covers	doz. .20	Toilet Paper, 1000 sheet rolls	½ doz. .42
Mason Jars—Pints	doz. .47	Canvas Gloves—1 doz. pairs for	.70

GROCERIES

Dill Pickles—1 gal. kits	.61	Carnation Wheat Flakes	doz. .80
Green Olives—1 gal. kits	.99	Violet Oats	doz. 1.20
Duffy's Sweet Cider—1 gal. jugs	.49	Corn Flakes—Maple Flake	doz. .80
Worcester Sauce—1 gal. jugs	.60	Tobasco Sauce	each .21
Navy Beans—25 lb. sacks	.99	Turkey Hash Tobacco, 10 cent size, for pipe or cigarettes	doz. .40
Chicken Rice—100 lb. sacks	2.40	California Star Chocolate—Sweet, 1-lb. cakes	.21
Cinnamon Bark	per lb. .31	Colburn's Dry Mustard—1-lb. cans	.35
Oolong Tea—Best for Cold Tea—75c grade	.47	Bayle's Cyclone Relish—Pints	.15
Soap, Laundry—Odds and ends, 20 bars	.60	Bayle's Cyclone Relish—½ pints	.08
Toilet Soap—Odds and ends	doz. .40		

HOSIERY

Men's No. 613—Black, 15c seller, ½ doz. pr.	.60	Women's No. 602—Black Gauze Silk Lisle, light and soft, 50 cent quality; ½ dozen	2.15
Men's No. 214—Black, 25 cent seller; doz. $2.15; ½ dozen	1.10	Boys' or Girls' No. 425—Fine Ribbed Black, fast color, sizes 6 to 10; ½ dozen	.75
Men's No. 223—Black, 20 cent seller; ½ dozen	.75		

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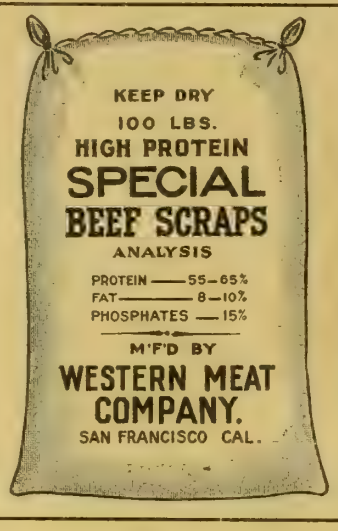

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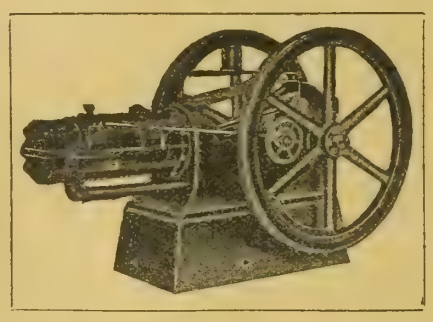

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Petaluma Cal

Shipments of peaches will begin from Hanford, Kings County, this week.

Irrigation and Forestry

WATER REQUIRED FOR CROPS.

A fact of immense importance, especially in regions of scanty rainfall, or those subject to severe droughts, has been brought out by investigations reported by J. A. Widtsoe, of the Utah Station, as well as by the work of other investigators. Prof. Widtsoe found "that the amount of water actually required for the production of a pound of dry matter becomes smaller as the available fertility of the soil increases." He states that "this law is not new, but it does not seem to have been applied to the cultural methods in a country where the limiting factor is the water supply."

Prof. Widtsoe found that thorough hoeing or cultivation throughout the season increased materially the yield of dry matter and decreased the amount of water required per pound of dry matter produced, that resting the soil for several years had the same effect, and that on fertile soils the water requirements of crops would be materially lowered by the addition of manure or commercial fertilizers. He believes that in every case the result is to be attributed largely to the plant food set free by the hoeing or fallowing or that added in the fertilizers.

The practical conclusion of all this is simply that in districts where the rainfall is the chief consideration it is not sufficient alone to store an abundance of water in the soil, but the soils themselves must be kept in such a condition that plants growing on them can produce dry matter with the smallest possible amount of water. Under a system of dry-farm rotation, in which a hoed crop is grown perhaps every other year, in alternation with wheat, a fairly large amount of available plant food will be maintained, but at the same time the amount of stored moisture will be so near the danger limit as to jeopardize seriously the maturing crop. On the other hand, where the soil after being fall plowed and left in the rough throughout the winter is allowed to lie fallow the following summer, a much larger amount of plant food is set free, and at the same time a larger amount of water is stored in the soil. This combination of favorable conditions is much more likely to result in a profitable yield than can any system of culture which tends to weaken one or the other of these vitally important factors. In the Great Basin district, practical experience nas demonstrated almost beyond a doubt that summer fallowing is indispensable in successful dry farming. In fact, it has become a doctrine that if land at all adapted to dry farming is summer fallowed every other year a crop failure for want of water is impossible.

Dry farming lands are fallowed: First, to store in the soil the precipitation of two or more years; and, secondly, to set free plant food which will enable the crops to reach maturity with the smallest amount of water. This doctrine explains, undoubtedly, many of the successes and failures on dry farms. Numerous cases are on record where soils under a comparatively abundant rainfall failed to yield well, while other soils under a much smaller rainfall yielded abundantly. There are many soils the available fertility of which is so low that they must be carefully cultivated in order to set free sufficient plant food before successful dry farming can be practiced upon them. This is shown in lands that are allowed to lie fallow for a year after the first plowing before crops are planted. The extraordinary yields sometimes obtained on soils where the rainfall is twelve inches or less may be explained by the naturally large quantity of available plant food found in them.

The understanding of the relationship between soil fertility and transpiration is vital to dry farming, but it is also important to irrigation farming, especially in districts where the water supply is limited. If the irrigation farmer, either by fallowing or by proper manuring, maintains his land in a fertile condition, he will better meet seasons of drought or water shortage than his neighbor whose lands are in an unfertile condition. The principle here discussed must be incorporated into the practice of agriculture in arid regions.

In the Utah experiments it was found that corn required a third less water to mature a pound of dry matter on soil which had been manured or fertilized with nitrate of soda than on the same soil without such treatment.

The important lesson from this work, briefly stated, is that if the farmer wishes to conserve a scanty water supply and use it to the best advantage in the growth of crops, he must keep his land rich.—Bulletin 435.

IRRIGATION DISTRICT BONDS.

The recent session of the legislature enacted a law regulating the issue of bonds by irrigating districts, which, had it been part of the original Wright act, would have been worth millions of dollars to the state.

It would have been worth a great deal had it been passed when the Chronicle was urging it twelve or fifteen years ago, when there was a general onslaught on the districts which had sprung up under the Wright act and were generally on the way to bankruptcy. Had the law been enacted then, some of the districts which failed could have been reorganized and saved, and those whose condition was hopeless could have made some kind of a settlement and relieved their lands of the lien upon them.

But it is better late than never, and the passage of this law ought to make these bonds gilt-edged securities, for they will be as good as human foresight and ingenuity can make them.

In brief, the law requires that hereafter no irrigation district bonds shall be issued except upon the favorable report of a commission composed of the State Engineer, the Attorney-General and the State Superintendent of Banks.

The State Engineer will pass upon the adequacy of the engineering operations and water suply. The Attorney-General will pass upon the title to any land acquired, and especially the water. The Superintendent of Banks will pass on the value of the property subject to taxation for payment of the bonds and the general ability of the district to carry the burden regardless of the outcome of the irrigation project.

Bonds cannot be sold to prudent investors when payment is doubtful in case of failure of the irrigation project. Whoever buys such bonds assumes a speculative risk which pru-

dent investors insist that borrowers hall take.

That was the trouble with the old district bonds. They were all specula- ive—most of them highly speculative. Few of them could possibly be paid unless the lands of the district were promptly subdivided, sold, and put un- der intense cultivation. And that at that time was impossible. In many cases the water supply was inade- quate, or alkaline, or of uncertain title. Or the projected works and estimates were insufficient. In some cases there was actual fraud.

And so most of the irrigation dis- tricts went to smash, with the lien of the bonds still clouding the title to the lands, and the sale of irrigation bonds stopped for half a generation. None of these things could have hap- pened had the present law been in force. The majority of the districts probably would have lapsed without incurring any debt, for in the eighties the time was not ripe. But those that started would have succeeded.

Now irrigated lands, well situated, can be sold, settled and paid for, for there is a market for the products at prices which will pay the bills. And district irrigation bonds issued with the approval of the newly created commission will be gilt-edged. And the law very properly makes them available as investments for savings banks and trust funds.

One quality they will still lack, and that is prompt marketability under all conditions. Savings banks, and espe- cially estates in trust, often wish to sell securities. Marketability, there- fore, affects the price even of bonds the redemption of which, according to their terms, is undoubted.

There is but one way to assure this marketability, and that is to have the bonds listed on the New York Stock Exchange. Then, if the volume out- standing is sufficient to attract atten- tion so that investors become familiar with their character, current prices will become established and a ready market made for them. The coupons should also be made payable in New York at holder's option.

There are now many irrigation bonds in the market—some good, some doubtful, some bad. At present the market only recognizes "irrigation bonds" and is shy of them.

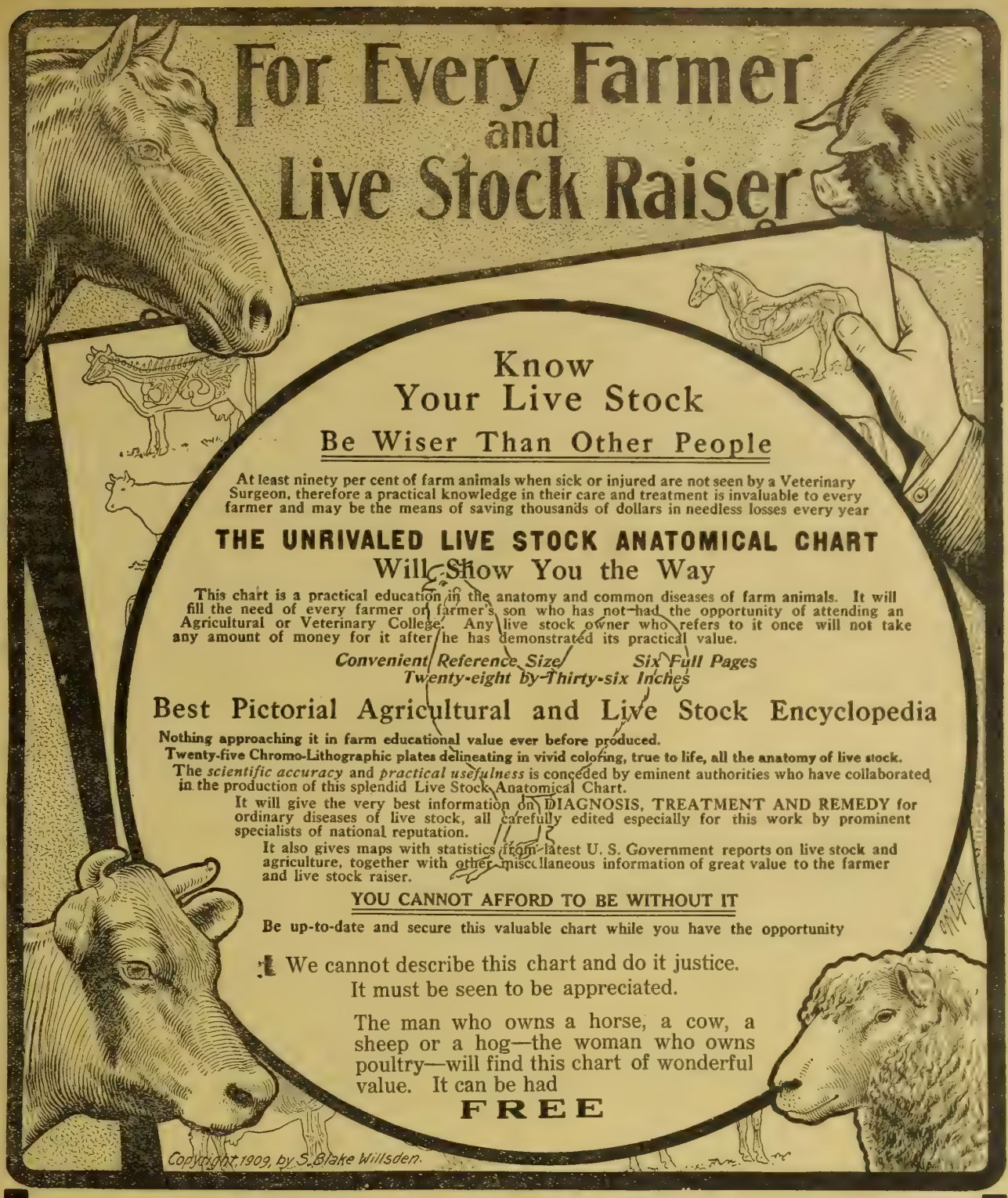
It is possible for our districts, by co-operation and a very moderate amount of advertising, to create a dis- tinctive New York market for "Cali- fornia district irrigation bonds." And if that is done, 5 per cent bonds should sell at a premium sufficient to more than pay all expenses. Of course, be- ing free of tax in this state, district bonds are worth more here than else- where, but buyers have ways of look- ing out for that. A good New York market would add greatly to the value of these bonds wherever sold.—San Francisco Chronicle.

TWO SYSTEMS OF JURISPRU- DENCE.

Hubert Bruce Fuller in the World's Work for June:

The comparison between the Eng- lish and American systems of juris- prudence and prevalence of crime are interesting and striking. The two peoples are of the same race—the sys- tems of government are almost identi- cal in principle, and the laws of both have for their origin the common law of England. In the United States the number of homicides is 115 per mil- lion inhabitants, while across the line in Canada it is but three. Why should human life be held so dear in Canada and so cheap in the United States?

For Every Farmer and Live Stock Raiser



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Be up-to-date and secure this valuable chart while you have the opportunity

We cannot describe this chart and do it justice. It must be seen to be appreciated.

The man who owns a horse, a cow, a sheep or a hog—the woman who owns poultry—will find this chart of wonderful value. It can be had

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Questions and Answers

THE EDITOR AND STAFF

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Stick Tight Fleas.

Please give remedy for stick-tight fleas. They are infesting horses, calves, chickens, cats and dogs, and even people.—Subscriber, Kerman.

This is an exasperating pest and will cause the loss of chickens by the wholesale. Probably the simplest and cheapest remedy is spraying everything with a strong brine. Some have gone so far as to use several hundred pounds of salt and spraying over the entire yards, turning on the hose occasionally to keep it moist. Those who follow this plan report it completely ridded the place of these fleas. A solution of corrosive sublimate, salt and water, applied with brush to the pests which are now on the animals will eradicate them. In doing this, whether on poultry or on the larger animals, care must be used not to get it into the eyes. Of course it is understood that corrosive sublimate is a deadly poison.

Rheumatism Affecting Milk.

Is it safe to use the milk from a cow that has rheumatism? At least we think that is the trouble, as she walks very lame in hind quarters.—Subscriber, Kerman.

We do not think this trouble would have any effect whatever upon the milk.

Fumigating Beans.

If J. A. C. of Anaheim will send name we will mail copy of the paper which will answer the weevil and other questions.

Drying Figs.

What is the proper way of drying the white fig? Also how preserve them?—Subscriber, Brawley.

Allow to ripen perfectly on the trees and handle carefully. Some dry just as they come from the tree, others expose to the fumes of burning sulphur. The object of fumigating is to give lighter color, prevent fermentation and kill any forms of insect life which may be present. If the sulphuring is done, let it be as soon as the figs are picked from the trees. Some prefer dipping in boiling water instead of sulphuring. It surely gives a higher quality of fruit. If salt is added at the rate of a pound and a half to every fifty gallons it is still better. They are then dried on trays, using care not to dry too hard. That they may dry evenly, turn once or twice daily. When turning if any are found souring they should be thrown away or used in the manufacture of vinegar. In case of rain or dew, see that they are covered. When dried place in sweat boxes to equalize the moisture. Another dip in boiling salt water proves beneficial if they are to be kept any length of time, and also softens them to aid in packing into bricks.

For preserving proceed as follows: Gather the figs with the stems on just before they are ripe enough to be eaten. Scrape off the skin carefully and drop the figs into a kettle of clear, boiling water, and leave half an hour. Then take out and allow to cool with the stems up. Make a syrup of a pound and a half of sugar and a half pint of water to each pound of fruit. Boil the syrup till nearly roping; put in the figs carefully and keep them under the water while cooking. If other than the natural flavor is desired, put a clove in the blossom end of each fig or cook them with a sliced lemon from which the seeds have been removed, adding a little ginger. The preserves keep well if made with an equal weight of sugar and figs.

To Color Cheese.

You have taught me how to make cheese. Now I would like to know what kind of coloring to get and how to use it. I tried the dandelion and it won't color the curd.—T. M., Gridley.

While there may be other makes as good I have always used the Hansen products in coloring and in rennet tablets. Glad you are having success with cheese making. There is always a good market for the small cream cheeses of an eighth of a pound weight.—M. E. S.

To Separate Butter.

Have a cow that freshened a few weeks ago. The first two or three times churning of butter was fine, but since that the butter and buttermilk will not separate and after churning becomes thick like cake batter. Cow is fed dry alfalfa hay and green barley. Can you please tell me the cause and how to remedy it.—Subscriber, Anaheim.

The temperature at which the milk is held is probably the cause of this trouble. When the milk is first set, put a pint of hot water into each gallon of the milk, enough hot water to bring the milk back to blood heat again or 98 degrees. Then put the pans into as cold a place as possible, so the cream will rise quickly. Stir the cream in the cream jar every time new cream is added. When the cream is smooth and sharply acid it will churn clean. If it is not like this, then it is not ripe for the churn. It can be ripened by stirring the cream with clean bottles filled with hot water until the cream reaches a temperature of 80 degrees. Cover it closely and let it stand for an hour, remove the covering and let it chill down to 45 and churn it in the morning, at that temperature or as near it as 50 degrees. If properly ripened it should churn in twenty minutes, the butter coming in granules the size of wheat. Stop the churn and cover the butter, after running off the buttermilk, with cold salt water. Let it remain under water while scalding and chilling the butter bowl. Rock the churn a few times to gather the butter, run the water off and cover again with water, rocking the churn to finish gathering it together. Run off the water, gather the butter into the bowl. If the butter is firm work at once; if soft, stand the bowl in a cool place a couple of hours before working.—M. E. S.

Early Onions.

How do they plant onions around Stockton and Lodi so they can have them ready for market in the spring? Is Greiner's new onion culture practical in California? I have his book. Where can I get such information if you cannot give it to me?—A. B., Raymond.

The earliest onions are produced from sets that are planted in August, September and October, and chiefly of the White Bermuda (which is really a straw color), Crystal Wax or White Portugal.

Greiner's New Onion Culture is in the main all right for California conditions, especially as it relates to the method of raising the plants in seed bed and transplanting to open ground instead of sowing the seed in rows and thinning. The latter method will invariably produce a large proportion of "thick necks" and it is more expensive to thin, than to transplant.

If the inquirer is a newcomer and wishes to engage in the work of growing onions for market, it would be money and time well spent to visit the localities he names and learn from the men who are doing the work there the things he needs to know. It will save him many costly errors.—Q. A. L.

Roup, Canker, Chickenpox.

Some of my chickens were affected with roup, canker and chickenpox. I dipped their heads in a solution of one pint of warm water and a teaspoonful of permanganate of potash holding under while I counted ten, and it cured all of them in a few days, except one that was too weak to stand when I tackled him. I have tried other treatments but none were as effective or easy as the dip. One can use it several times if kept covered.—Subscriber.

Legal

Edw. L. Payne, attorney, 301-302 Douglas Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Payne is paid. When replies are wished in Cultivator address query to 115½ N. Broadway. Los Angeles.

Exemption.

What property is exempt from seizure in the state of California? I married man gives chattel mortgage on property exempt from seizure without the signature of his wife, can his wife hold the property?—Subscriber, Reedley.

The enumeration of property exempt from execution in this state would take too much space, and I apprehend the better way would be for you to designate in a question the particular articles in which you are interested. If the property mortgaged was the separate property of the mortgagor, or the community property of yourself and wife, it would make no difference that she did not join in the mortgage. The fact that the property mortgaged is exempt from execution makes no difference.—E. L. P.

Stepdaughters not Heirs.

I married a widow with two daughters and have two sons of my own. To whom will my property pass after death of my wife and myself, that is would my wife's daughters have an equal share with my sons?—Subscriber, Otay.

Unless you adopted your wife's daughters, they would have no legal claim upon your estate.—E. L. P.

It is possible Mr. Payne did not consider the contingency of the husband dying before the wife. In this

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Our 30-60 Horse Power Oil Traction Engine will be ready for delivery October 1.

Write For Catalogue LA 37

Our 2-cylinder, 4-cycle Engine will operate on 3-cent distillate, as good as with the best gasoline.

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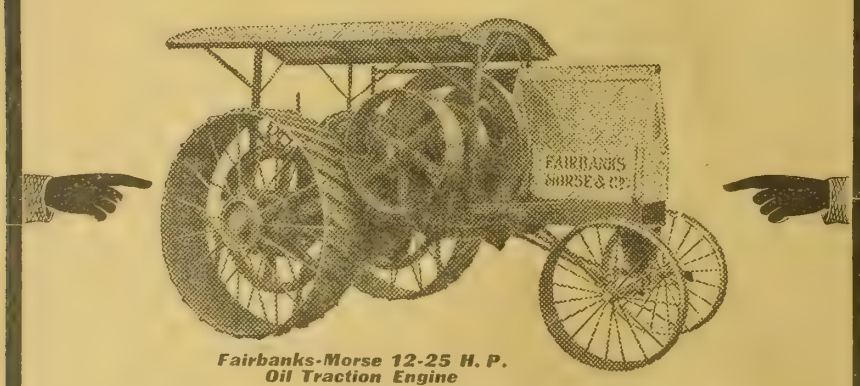

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The drawbar pull of this engine is equal to 12 horses. When used as a belted engine, 25 H. P. can be developed. It is well adapted to Threshing and Hay Baling.

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425 East Third Street, Los Angeles, Cal.

case, we believe, the wife would inherit one-third of the estate, and this portion at her death would pass to her children.—Ed.

Right of Way.

A agreed to sell to B (a railroad company) a strip of land for a right of way; B agreed to adopt this route if the people of this community would furnish the right of way. After a committee had secured pledges for enough to buy the right of way, A gives B a deed and puts it in the hands of the secretary and treasurer of this committee to be delivered to B when the amount agreed upon had been paid to A. In the mean time A has permitted B to do the grading across his place. Now some of the people who pledged to help buy the right of way have refused to pay. Can A stop B from laying the rails or any other work on his place without an injunction until A has received the money and the deed has been turned over to B?—J. T. H., Laton.

A, having permitted B to go into possession of the right of way, cannot eject B by force, but must appeal to the courts for his remedy, if B refuses to vacate. Neither can A by force compel B to cease work on the right of way.—E. L. P.

Community Property.

A deeds a triangular piece of land, dimensions 100 feet, to B. A's wife does not join in the deed. Consideration is $1.00. Is B's title good? Has A a legal right to give a warranty deed to his orchard covering this lot? B agreed to occupy land and pay taxes, which he has not done.—Subscriber, San Diego.

If the land deeded was the separate property of A, or community property of A and his wife, the signature of the wife is not necessary to conveyance of the title. Ordinarily, a verbal agreement is not permitted to vary the terms of a written document, and I presume would not be permitted to annul this deed. If the agreement to occupy and pay taxes on the lot was the consideration for the deed outside of the nominal sum of one dollar, and the deed would not have been made except for the verbal agreement, it is possible that under steps properly taken the conveyance could be rescinded. If the conveyance is a good and subsisting one, A has no right to convey the lot to any one else.—E. L.,

THE WONDERFUL LITTLE COUNTRY.

Mr. Booker T. Washington, in the World's Work for June, gives a number of observations he made during a recent visit to Denmark:

"I have heard it said repeatedly since I was in Denmark that the Danish people as a whole were better educated and better informed than any other people in Europe. Statistics seem to bear out this statement; for, according to the immigration figures for 1900, although 24.2 per cent of all persons over fourteen years of age coming into the United States as immigrants could neither read nor write, only eight-tenths of one per cent of the immigrants from Scandinavia were illiterate. Of the Germans, among whom I had always supposed education was more widely diffused than elsewhere in Europe, 5.8 per cent were illiterate."

Mr. Washington says also that Denmark is the most progressively agricultural and the most democratic place in the world, and that it has more telephones to the number of inhabitants than any country in Europe.

The restoration of navigation of the Mokelumne River will aid in the development of 200,000 acres of rich land.

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The Imported Percheron Stallion
SANSONNET.
Color gray. Foaled March 1, 1905.

SANSONNET was considered by Mr. Charles Aveline, President of the Percheron Society in France, to be the best two-year-old that he ever raised. With immense size, heavy bone, short legs and enormous width, Sansonnet possesses in the highest degree all the qualities most sought for in a perfect draft horse. It is not often that such an extraordinary individual is permitted to leave his native country, and the breeders of America are very fortunate in securing the services of a horse that any breeder in France would be proud to place at the head of his stud of pure-bred mares.

SANSONNET was entered in the Colt class and open class at the International Live Stock Show, Kansas City, Mo., in 1906, and took the blue ribbon in both classes. Weight 2,000 pounds. Sure foal getter and splendid disposition.

Terms to responsible parties. Apply to Wm. M. Way, Secretary Farmers Percheron Horse Association, R. F. D. No. 5, Modesto, Cal.

Stallions for Sale—Acclimated animals. All harness broken, sound and gentle. Leader 40637. Dapple gray, 8 yrs. old. Ladoga Leon, 66619, 2 years old. Dark gray. Dam weighs a ton. Liberty 74310. Black yearling. These three are registered in the Percheron Society of America. Atwood, bay carriage stallion, 2 yrs. old. Solid color. Sired by Athadon, 1st dam by Junio, son of Electioneer. McKinney Don, 2 yrs. old. Solid bay with black points. Sire Stanford McKinney. 1st dam Belladonna, standard by trotting record. 2nd dam by Athaneer. Both well broken to buggy. Minnewawa Stock Farm, Fresno, Cal.

For Sale—Imported coach stallion, Registered No. 4113. In his prime, sound, kind and stylish. Guaranteed. Colts of the finest type to show. Dr. Fred G. Matthews, 1232 Central Ave., Los Angeles. Both phones.

Grapewild Farm Herd of thoroughbred Berkshires. State fair prize winners. Boars and sows of all ages, unrelated. Address A. B. Humphrey, Mayhews, Sacramento Co., Cal.

Dairy Floating Thermometers and all kinds of supplies for the dairy at Guy F. Kelsey Co., 108 E. 8th St., Los Angeles. Phone Sunset Main 7496.

For Sale—Shorthorn bulls and Berkshire hogs. Bred for size and quality. H. L. Murphy, Perkins, Cal.

Three Holstein Friesian Bulls, splendid young animals for sale, well marked and subject to registry. Write at once to Geo. G. Roeding, Fresno, Cal.

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Local Representative Wanted. Splendid income assured right man to act as our representative after learning our business thoroughly by mail. Former experience unnecessary. All we require is honesty, ability, ambition and willingness to learn a lucrative business. No soliciting or traveling. This is an exceptional opportunity for a man in your section to get into a big paying business without capital and become independent for life. Write at once for full particulars. Address E. R. Marden, Pres. The National Co-Operative Real Estate Company, L 448, Marden Bldg., Washington, D. C.

Manager of Orange Property—Have had wide experience in handling orchards and alfalfa. Wish position as manager or in directing labor. Specially wide experience with the citrus. Address Y, Cultivator Office.

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Have You a Cow?—Have you a creamery? Have you a cheese factory? Write us. Everything used in either a dairy, creamery, cheese factory, or for handling milk, cream, butter, or cheese. We are in a position to quote you prices on entire creamery or cheese-making outfits. We make a specialty of only the latest and best sanitary machinery and supplies. Send us a list of what you want and we will quote prices which we feel certain will interest you. O. J. Weber Co., 225-227 East Sixth St., Los Angeles, Cal.

GUY F. KELSEY CO.
Full line of dairy supplies. Come in, phone or write. Generous sample of Prosperity Washing Powder given on request. 106 East Eighth St., Los Angeles, Cal. Phone Main 7496.

Makes Money for You—New sugar-beet pulp (Kow Breakfast Food) takes the place of green grass, and is conceded to be the best butter producer in the world. Price 50c per ton f. o. b. cars or wagon at Los Alamitos Sugar Factory, Los Alamitos, Cal.

Agricultural Implements—Vehicles

For Sale—Agricultural implements, vehicles. Splendid values, lowest prices, liberal credit. See us without fail before buying. Catalogs mailed out of town customers. Write us describing what you wish to buy. When in the city a personal call will show the largest stock and assortment in the Southwest. Arnott & Company. Established 1892. 112-118 South Los Angeles Street, Los Angeles.

TREES

For First-Class Valencia and Navel Orange trees and Eureka lemons, see A. G. Snow, Oxnard, Cal.

Fine line of Navels—Valencias and Eureka lemons for delivery spring of 1911. Contract now and get the first choice. The King Citrus Nurseries, Whittier, Cal.

For Sale—500 Choice Valencia Orange Trees and some Washington Navels. G. W. Thurston, R. F. D. 6, Box 82, Los Angeles, Cal.

RARE PLANTS

Ahuacate (Alligator Pears, Avocados), Persea Gratissima. New crop is now coming from Mexico. None better for stock. $4.50 per 100; $40 per 1000. Montarioso Nursery, Box 1500, Santa Barbara, Cal.

Wild Plant Improvement Gardens, Santa Ana, California. Newton B. Pierce, proprietor. Rare choice ornamentals and new fruits from all lands.

Ferns for growing on Adiantum pedatum 5c, Pteris serrulata 3c, Aspidium tsusimense 3½c and 5c. Terms cash. Ballou's Nursery, Pasadena, Cal.

FARM LANDS FOR SALE.

Money Making Lands in Famous Pajaro Valley—Soils that will grow anything. One 1,000-acre tract suitable for subdivision; fine for fruit and poultry farms. Price $40 an acre. 70-acre eucalyptus proposition, 60 acres in 2 year old trees now 7 to 10 feet high; 10 acres in orchard. Apples worth $1,000. A pick-up at $8,500. For full particulars and list of 50 orchard bargains write to Farm and Forest Realty Co., Watsonville, Cal.

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733-acre dairy and alfalfa ranch. Plenty of water, 2 sets buildings, 360 acres in crop, fine oak grove, over 3,000 cords wood, 4 miles from Escondido. Family orchard. This is an ideal place. F. J. Conrad & Co., Escondido, San Diego Co., Cal.

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DUCKS

For Sale—Mammoth Pekin and Indian Runner duck eggs. Now is the time to hatch to raise next season's layers. Eggs are running as high as 95 per cent fertile; 85 per cent guaranteed. 75 cents per 12, $5 per 100. A. E. Nelson, El Monte, Cal. **Breeders for sale**

Limited Number of Mammoth Pekin and Indian Runner Drakes for sale. Also a limited number of trios. My stock is of the finest non-related. Mrs. Benja. G. Johnson, Box 10, R. D. 1, Vacaville, Cal.

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MISCELLANEOUS

Free—"Investing for Profit" Magazine. Send me your name and I will mail you this magazine absolutely free. Before you invest a dollar anywhere get this magazine—it is worth $10 a copy to any man who intends to invest $5 or more per month. Tells how $1,000 can grow to $22,000; how to judge different classes of investments, the real power of your money. This magazine for six months free if you write today. H. L. Barber, Publisher, R. 430, 28 W. Jackson Boulevard, Chicago, Ill.

For Sale—1 length 6-inch standard at 28c; 1 length 5-inch, 22c; 1 length 4-inch, 16c; 2 lengths 3½-inch, 14c; 21 lengths 1½-inch, 4c; 14 lengths 6 5-8-inch S. D. casing, 25c; 34 lengths 4½-inch, 13c. Also one 4-inch and two 3¾-inch 20th Century Air Lifts. Address H. E. Carse, Consulting Engineer, 222 Security Bldg., Los Angeles, Cal.

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For Sale—California redwood hive bodies. 25c each; also reinforced comb foundation. Boulevard Planing Mills, 3600 Boulevard Ave., Fruitvale, Cal.

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Special Incubator Offer—We are overstocked on 130-egg size Success Incubators. We offer 50 of them at $10 each as long as they last; regular price $14. Order now. E. E. McClanahan Incubator Co., 112 East 8th St., Los Angeles, Cal.

FARM LANDS WANTED.

Farms Wanted—We have direct buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property Free. American Investment Association, 12 Palace Bldg., Minneapolis, Minn.

POULTRY

Lasher's Hatchery, 15 Kent St., Petaluma, Cal.—Why my chicks live and grow in the hands of my customers: They are all hatched from free range stock, bred right, mated right, fed right. I have the most up-to-date hatchery building in the country, built of brick, with dead-air space in wall, giving me a uniform heat that means strong, healthy chicks; 16 years in the hatching business, 16 years at present stand. It is no experiment or guesswork with me. Am now booking orders for August and later delivery. On account of time and room, will sell all of my Belgian Hares, 200 breeders, young and old. Write for prices on just what you want.

All We Know is Rhode Island Red Chickens. But we know them so well that our baby chix, $15 a 100, are the best on earth. There! Pure blood, good strains, well mated by expert breeders. I. X. L. Poultry Yards, 587 Mission St., Santa Cruz, Cal.

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The Goodacre Strains—Our Red chicks are hatching strong, only $12 per 100. Do you want Ancona chicks at $15 per 100 or 15c each? How about yearling males at $3 for Leghorns and Anconas; $5 to $7 for R. I. Reds and Buff Orpingtons? Eighteen Leghorn hens and cock for $20; R. I. Red young cock and four hens, $12; Buff Orpington young cock and four hens, $14. Write for our summer price list. Goodacre Bros., Compton, Cal.

S. C. White Leghorn Cockerels, 3 months old, from roosters of F. Baldwin, San Jose, and one of the best flocks of White Leghorn hens in Petaluma. If taken before Sept. 1, $1.50 each or $12 per dozen; after Sept. 1, $2 each or $15 per dozen. Also Buff Orpington cockerels, $1 each. L. T. Smith, Beaumont, Cal.

BONNELL'S S. C. BLACK MINORCAS WIN EVERY TIME.
At Los Angeles Show, 1911, every first premium and two silver cups; two specials for best male and female. Eggs at half price, $2.50 per setting. C. C. Bonnell, 2919 Brighton Ave., Los Angeles, Cal.

Baby Chicks from my pure-bred stock S. C. White Leghorns, carefully selected for laying and standard qualities. $9.00 per 100, $85.00 per 1000. Eggs for hatching $5.00 per 100. Correspondence solicited. J. R. Heinrich Poultry Yards, Arroyo Grande, Cal.

Rose Comb R. I. Reds—Eggs one-half price balance of season. A few breeders for sale. Young stock later. Mating list on request. W. H. Pickering, 984 E. 55th St., Los Angeles, Cal.

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White Leghorns—Buff Orpingtons. Bred for beauty and great egg production. Grand lot of both old and young stock for sale. Prices reasonable. Write your wants. Model Poultry Farm, Box H, Irvington, Cal.

Hicks Jubilee Hatchery, now booking orders. Write us your wants. We use eggs from first-class stock only. Try us. W. J. Hicks, Petaluma, Cal.

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For Sale—Second-hand windmills, gasoline engines, wagons, buggies, harness. Disc, gang, walking, riding and side hill plows; slip, Fresno and wheel scrapers; headers, balers, seed sowers, spike tooth and disc harrow, mowers, fanning mill, dry washer, disc cultivator, reaper, eveners; road grader, road roller, Hurst two-horse sprayer, mining hoist, sundries.

WINDMILL OUTFITS.
8-ft. Aermotor, tower, pump, 3,000-gal. tank, $59 f. o. b.; 13-ft. Aermotor, pumping and power mill, cost new $120, for $60; 12-ft. Aermotor, tower, 10,000-gal. tank, tank stand, 100 ft. 3-inch pipe in well, rods and cylinder; $150 for this large irrigation outfit.

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4 H. P. Stearns in fine shape, 6 H. P. Fairbanks, 6 H. P. White & Middleton, 6 H. P. Union complete with No. 3 vertical centrifugal pump, $140 f. o. b.; 25 H. P. engine and hoist; 22 H. P. Foos, guaranteed first-class, $350.

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For Sale—Complete pumping plants, new and second-hand. Electric and gas engine driven. All sizes. Send us your details for our recommendations, irrigating appliances and pipe molds. We can save you money on your installations. H. U. Roeding & Co., Foxcroft Bldg., San Francisco, Cal.

11 H. P. White & Middleton Engines, guaranteed like new. Baillie & Brandt Co., 943-945 N. Main St., Los Angeles, Cal.

For Sale—25 H. P. gasoline engine. Must go, regardless of price. Machinery Exchange, Main and Bruno Sts., Los Angeles, Cal.

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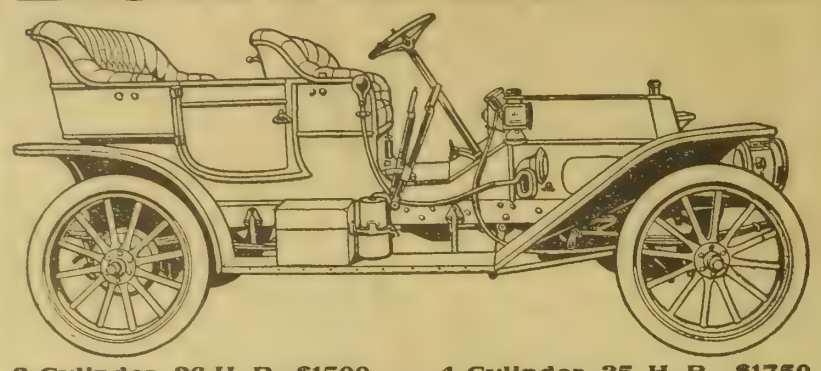

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Household Department

BE LOVELY WITHIN.

Little Evelyn's cheeks bloomed in delicate pink,
And her clustering hair framed with tendril and curl
A face so lovely you never would think
She could be for a moment a cross little girl.

Yet cross she was, in a constant fret,
Every hour she spoiled with some trouble or strife,
Till every one said: "Well, I never have met
Such an ill-natured child in the whole of my life!"

Her sister Peggy was plain and small,
Freckled and homely, with straight brown hair;
But you never thought of her looks at all,
For she seemed to be everything sunny and fair.

"I can't-" and "I won't-" that was Evelyn's cry
From morning till night, against all she was told;
While Peggy's low voice would be saying, "I'll try,"
With a patience and hope that were good to behold.

Till at last Peggy's freckles more beautiful grew
In every one's sight than all Evelyn's charms
Of pink cheeks, golden hair and eyes violet blue;
No one wished to fold her in affectionate arms!

But Peggy! Love found her wherever she went,
Clasped her warm little hand and looked into her eyes,
Smiled on her and blessed her with joy and content,
For her spirit within was so sweet and so wise.

Never mind, children dear, about plainness of face,
But strive all you can to be lovely within,
And the beautiful spirit will clothe you with grace,
And this is a joy every mortal can win.

—Celia Thaxter.

THE LIFE PRISONER.

The murderer was sitting in a dark cell in the deepest cellar of the great prison. Three times he had attacked the wardens. For the two first offenses he had been whipped, after the third he was placed in chains and from that day he grew more sullen and desperate than ever.

Then the old director of the prison died and a new man came to take his place. The news of this spread among the prisoners and hope and fear took possession of their minds.

One day footsteps were heard outside the murderer's cell, the door was opened, the warden remained outside while another man entered. He was blinded by the darkness and at first he saw nothing, but the murderer saw him plainly enough. He stood up and glared at the intruder, a young pale man with almost transparent features. His eyes were blue and dreamy, his hair blonde, as was also his curly beard.

"The director," the rough voice of the warden outside announced. The murderer straightened himself a little more and the director stepped closer. His eyes had now adjusted themselves to the darkness and it was easily seen that the surroundings made an unpleasant impression upon him, but his voice was calm and gentle.

"You are convict number seven?"

"Yes, sir."

"You have been whipped twice for a very serious offense."

"Yes," the prisoner replied sullenly.

"You have been put in chains?"

The prisoner did not reply, but rattled his chains defiantly.

"I am the new director. You must not consider me your enemy, but rather your teacher."

"Teacher!" the prisoner repeated, with a scornful laugh.

"Yes, teacher."

An impatient movement was heard outside.

"I want to treat you with kindness if possible. I consider that treatment more useful than whippings."

"Yes, sir," replied the prisoner, mechanically, without understanding the director's words.

"Today is the first of October. I shall return on New Year's day. If you have behaved well during the three months, I will give you something no prisoner has ever had before. Now try to improve."

The director placed his small white hand on the convict's shoulder and the unfamiliar touch of a kind hand made the prisoner's knees tremble.

The director left, the door was locked, the sound of his steps died away in the hall.

The prisoner's first thought was a touch of emotion, the second of hatred, because here was a man he felt would prove stronger than himself, the third and last was the question: "What did the director mean when he said he would give me something no prisoner ever had before "

He tried to find an answer to this question for days, weeks and months. He thought of all the things not to be found in a prison. A looking glass? He had not seen his own image for years, but prison life had made him lose every trace of vanity.

A flower? There had been a time when his highest wish had been to get a flower in a pot that he might take care of it and watch it growing—but now he cared no longer for such a thing.

At last he thought that there was nothing in particular that he was longing for and he was from now on only curious to see what the director might give him.

With his fingernail he scratched a mark on his bench for every day that passed and one day he discovered that it was New Year's Day. He had been as quiet as possible since the first of October and his mind had been entirely occupied with speculations as to what he was to get.

He trembled at the thought that there might be something to be said against him, that he should never know what the director had planned to give him.

At noon he heard steps on the stairs, and steps were as words to him, so acute had his sense of hearing become. He plainly recognized the steps of the warden and the director, but there was another sound he did not understand, a kind of light tripping which filled his heart with strange forebodings. Long before the steps reached his door he was already standing at attention. The blood was hammering at his temples and his heart beat violently. Would they pass his door? His excitement was almost more than he could bear.

No, they stopped outside. The door

slowly opened screechingly on its hinges and the director entered.

"Have you behaved well during the three months since I was here last?" he asked.

"Yes," he answered in a voice that trembled a little.

"You remember I promised you a reward?"

He had barely strength to answer. If he remembered?- He who had thought of nothing else for three months.

"Now you are to have it."

The murderer trembled all over. The director whistled and a small black poodle came in, slowly, cautiously, as if it feared a trap.

"That is for you," the director said.

The murderer looked at the director, and there was a gleam of suspicion in his eyes as he asked, "How long am I to keep it?"

"As long as you treat it well and behave well."

The director saw the light of a great joy in the convict's eyes, but he said nothing.

The door was barred again and the prisoner was alone with his new comrade.

For a long time they stared at each other. He was afraid to call the dog, because he had a feeling it would not obey him, but at last he tried. The poodle came slowly and at last stood quite close to him. He got courage to pat its head. It placed its front paws on his knees. He nearly tumbled over from the shock, but he recovered and patted the dog with both hands. The dog jumped on his lap and licked his forehead and eyes until the murderer burst out crying.

From that day there were no more complaints about convict number 7, though he sat in the cell for six years longer.

When he died the dog was set free, but it cared for nobody. It laid down on the murderer's grave and refused to eat and drink. It died rather than live without the only friend it had known since it was a small puppy.—Journal of Agriculture.

CAKES WITHOUT EGGS.

White Cake.

One cup sugar, good quarter cup butetr, cream together, add one cup sweet milk, one teaspoon flavoring, two cups flour, one teaspoon baking powder sifted through the flour three times. This rule will make a nice cream pie. Bake the mixture in Washington pie plates. When cold, lay between and on top whipped cream.

Fruit Cake.

One-half cup white sugar, scant half cup butter, half cup molasses, one teaspoon soda stirred in molasses to foam, half teaspoon each of clove, nutmeg and cinnamon, one cup stoned chopped raisins, half cup currants, half cup citron (flour the fruit), two and one-half cups flour, one cup sour milk. Bake slowly.

Ribbon Cake.

Bake the white and fruit cake mixture in long tins. When done, lay together with jelly, and you will have a nice ribbon cake almost equal to the one made with eggs.

SCALLOPED TOMATOES.

Pour boiling water over enough ripe tomatoes to make a quart when "dressed." Remove the skins and slice enough for a layer an inch thick in an enameled ware basin that has been well buttered. Over this put a layer of bread crumbs half an inch thick, and sprinkle a bit of salt over them. Drop on a few bits of butter the size of peas. Put in another layer of tomatoes, and over that one of bread crumbs, finishing as before, with salt and butter. Continue alternating the layers until the dish is nearly full—the upper layer being of bread crumbs, and these much coarser than those that went into the interior of the scallop. Bake half an hour in a hot oven.

TOMATO SOUP.

Peel two quarts of tomatoes, boil them in a saucepan with an onion and other soup vegetables; strain and add a level tablespoonful of flour dissolved in a third of a cup of melted butter; add pepper and salt. Serve hot over little squares of bread fried brown and crisp in butter. An excellent addition to a cold meat lunch.

ORANGE PUDDING.

Peel and separate into quarters three large oranges; put in a bowl and sprinkle with sugar. Make a boiled custard with a pint of milk, the beaten yolks of three eggs, three tablespoonfuls of sugar and five drops of vanilla flavoring. Beat the whites of the eggs until stiff, add five tablespoonfuls of sugar, drop in teaspoonfuls on a buttered baking tin and set in the oven until delicately browned. When ready to serve, pour the custard over the oranges and arrange the little balls of the whites of the eggs on the top.

DRESS.

Courage oozes out of the holes in a ragged suit, and fear enters. But give the same man a new suit, clean linen, a good hat and shining shoes, and you will see how soon fear will fly away and confidence be restored. He who before was afraid to speak in whispers, lest he might be heard and consequently seen, will now talk loudly of million dollar propositions, though he may not have a cent in his pocket. It is the duty of every man to dress as well and neatly as his means and circumstances will allow. He should cultivate taste in his apparel and show wisdom in its selection. His main object should be to give grace to his figure and attractiveness to his general appearance; but, above all, he should dress in accordance and in keeping with his station in life.—Rev. Madison C. Peters.

PRESERVING SIGHT.

"In every text-book in one large city is to be pasted a label containing the following:

"Your eyes are worth more to you than any book.

"Your safety and your success in life depend on your eyes; therefore, take care of them.

"Always hold your head up when you read.

"Hold your book fourteen inches from your face.

"Be sure that the light is clear and good.

"Never read in a bad light.

"Never read with the sun shining directly on the book.

"Never face the light in reading.

"Let the light come from behind or over your left shoulder.

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"Rest your eyes by looking from the book every few moments.

"Cleanse your eyes every night and morning with pure water."

It has been well said that a farm can never rise above the level of its owner.

Koppel Agricultural Railroads

for Ranches, Produce Farms, and Beet Sugar Fields
SAVE TIME and LABOR
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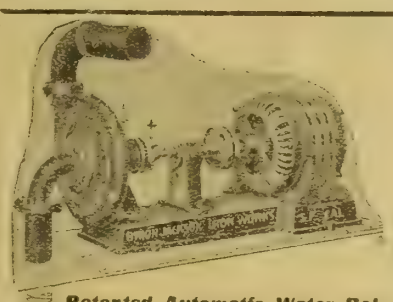

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WORKS
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A New Book and a Good One

The Story of the Soil

By Cyril G. Hopkins

"A lobe tale threading a substantial fabric of important facts about the soil"

I must say that I think the book is destined to do more good, stir more thought, encourage more upward effort among the farmers of this country than any other publication that has yet appeared. It was a happy thought making a human story of it.—Ex-Governor W. D. Hoard, Ex-President Board of Regents, University of Wisconsin, Editor of Hoard's Dairyman, Fort Atkinson, Wisconsin.

I enjoyed every word of it. It is fascinating. I doubt if a dozen people in the country would believe that it is possible to write a novel about the soil—these big soil problems handled so ably, so plainly that any farmer can understand. Here is a book that certainly every man in the land should read.—Editor Charles W. Burkett, of American Agriculturist and of Ginn & Company's Country Life Education Series, Boston, Mass.

This book is the greatest work of fiction based on agriculture ever written. The narrative contains a storehouse of information that will be worth millions to the farmers of America. Read this story; it is worth its weight in gold.—Burridge D. Butler, Publisher of the Prairie Farmer, Chicago, Illinois.

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San Francisco-Los Angeles Produce Markets

Los Angeles Market

LOS ANGELES, July 26, 1911.

Butter.

The long time at which butter quotations have remained stationary has ended and a slight advance is noted during the week. Quotations have been lower than they should have been for some time. Conditions firm at the advanced price.

Prices to trade 2½c in advance of the following Produce Exchange quotations:

Extras	.24
Firsts	.23
Ladies	.21
Country	.20
Eastern	.21

Cheese.

Local Anchor	.16
Oregon Daisy	.16@16½
Northern Fresh	.15
Domestic Swiss	.18
Imported Swiss	.30@32

Eggs and Poultry.

Easterns remain as last week, but all local grades are advancing on firm market.

Paying prices f. o. b. Los Angeles are:

Local ranch, candled	.30½
Case count buying price	.28½
Northern and Imperial	.24½@28½
Eastern	.23

Dealers pay for live poultry f. o. b.:

Hens, per lb	.12@15
Roosters	.8
Broilers	.16
Fryers	.14
Roasters	.18
Turkeys	.22@23
Ducks	.14@15
Geese	.15
Guinea hens, doz	.4.00
Squabs, doz	.1.75

Live Stock.

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs	.7¼
Prime steers	.6
Heifers	.6
Calves, per lb	.6½
Sheep, ewes, per head	.4.75
Lambs, per head	.3.75@4.25
Wethers	.5.00@5.50

Potatoes.

Wholesale prices are:

Sweets, yellow, lb	.7@8
New potatoes, lugs	.1.25
Burbanks, lug	.1.40@1.60

Onions.

Wholesale quotations:

Australian Red	.1.75
Silverskins, ctl.	.1.50
Yellow Danvers	.1.75
Garlic	.7@8

Vegetables.

Wholesale quotations:

Artichokes, northern, doz	.75@90
Asparagus, lb	.7@9
Beets, doz. bunches	.20@25
Bell peppers, lb	.8@10
Beans, wax	.3@4
Green chilis	.12@15
Cucumbers, lugs	.35
Cabbage, sack	.1.00@1.25
Cauliflower, crate	.3.50
Celery, new, crate	.3.00
Carrots, doz	.20@25
Corn, lug	.35@40
Egg plant	.8
Horseradish, lb	.12½
Onions, green, doz bunches	.10@15
Kolrabi, doz bunches	.40
Leeks, doz	.35@40
Lettuce, crate	.75@95
Mushrooms, basket	.3.50@4.00
Oyster plant, doz	.35@40
Okra	.4@5
Peas, lb	.4@5
Parsley, doz bunches	.20@25
Parsnips, doz bunches	.20@25
Radishes, doz bunches	.15@20
Rhubarb	.1.25@1.50
Spinach, doz	.15@20
Squash, summer	.35@40
Spearmint, doz	.25@30
Tomatoes, crate	.50@75
Turnips, doz	.30@35
Watercress, doz	.25@30

Citrus Fruits.

Valencias	.2.25@2.75
Grapefruit	.1.75@3.25
Lemons	.1.75@5.00
Limes, hundred	.1.25

Fresh Fruits.

Wholesale prices on the market are:

Apricots, crate	.75@85
Apples, W. Astracan, lug	.1.50
Apples, Crabs, lug	.1.50
Bananas	.4@4½
Cantaloupes, ponies	.1.75
Cantaloupes, standard	.2.00
Cherries, white, bulk, lb	.8@9
Currants	.8@10
Figs, box	.75@95
Grapes, Sweetwaters, crate	.1.10@1.35
Grapes, Thompson Seedless, lug	.1.25
Grapes, Black, crate	.1.50
Grapes, Malagas, lug	.1.35
Loquats, lb	.4@6
Loganberries	.7@8
Nectarines, box	.1.50@1.75
Peaches, lug	.1.25
Pineapples	.7@8
Plums, Clymans, lug	.1.50
Plums, Satsuma	.1.50@1.75
Plums, Tragedy	.1.50
Plums, Burbank	.1.35
Plums, Green Gage	.1.75
Prunes, Simoni	.1.50
Pears, box	.2.50
Dewberries	.4@5
Blackberries	.4@5
Raspberries	.7@8
Gooseberries, lb	.8@10
Strawberries	.3@5
Watermelons, lb	.1½@2½

Dried Fruits.

Wholesale prices are:

Evaporated Apples, fancy, lb	.20
Apricots	.16@17
Figs, box	.1.85@2.25
Peaches	.8@10
Nectarines	.9@10
Pears	.12@13
Prunes	.11½@13½
Plums	.10

Beans Dried.

Wholesale quotations:

Limas	.6.75
Black eyes	.8.00
Pinks	.5.75
Lady Washington	.4.00
Small white	.3.75@4.00
Garvanzas	.4.50
Lentils	.6.00@7.00

Nuts.

Wholesale quotations:

No. 1 soft shell walnuts	.18
Almonds, IXL, lb	.17@18
Pecans, polished	.15@16
Peanuts, Eastern	.8
Peanuts, California	.6
Pine Nuts	.18@20

Honey.

The prices given below are general wholesale quotations, but producers are reported as getting 7, 7½ and 8 for water white, white and light amber.

Wholesale quotations:

Extracted water white	.9
Extracted light amber	.8
Comb water white	.18@19
Light amber	.15
Beeswax	.30

Hay.

Buying prices f. o. b. cars Los Angeles are:

Barley hay	.11.00@13.00
Wheat hay	.11.50@12.50
Tame oat	.13.00@14.00
Alfalfa	.12.50

Grain.

Wholesale selling price f. o. b. Los Angeles:

Wheat, new, cental	.1.70@1.75
Corn	.1.70@1.75
Kaffir	.1.75
Millet	.3.25
Popcorn	.4.75@5.00
Egyptian corn	.1.65
White oats	.1.80
Seed barley	.1.50

Feed Stuff.

Wholesale selling price f. o. b. Los Angeles:

Alfalfa meal	.1.15
Cracked corn	.1.75
Cracked wheat	.1.95
Shorts	.1.90
Bran	.1.65
Oil cake meal	.2.50
Feed meal	.1.95
Rolled barley	.1.50

San Francisco Market

SAN FRANCISCO, July 25, 1911.

Butter.

An advance of a half cent or more is noted in all grades and the market is very firm at present quotations:

California extras, lb	.24

Price to trade 2½c in advance of the following Produce Exchange quotations:

California extras, lb	.23½
Prime firsts	.23
Firsts	.22
Seconds	.21½

Cheese.

Cal. flats	.11@13½
Cal. Y. America, fy, new	.12½@14½
Oregon, fancy	.14

Eggs and Poultry.

A material strengthening of the egg market is to be noted and Monday saw a slight advance on nearly all grades.

Official quotations of the San Francisco Wholesale Dairy and Produce Exchange are:

Fresh ranch extras	.26½
Prime firsts	.24
Firsts	.23
Seconds	.19½
Eastern seconds	.16
Select pullets	.22½
Hens, doz	.4.00@9.00
Fryers, doz	.4.50@5.50
Ducks	.4.50@7.00
Broilers	.2.00@3.50
Roosters, doz	.4.00@9.00
Geese	.2.00@2.25
Pigeons	.1.75@2.25
Squabs	.2.00@2.50

Live Stock.

San Francisco prices, gross weight:

Steers	.4.00@5.25
Cows and heifers	.3.25@4.25
Calves, lb	.5@6¾
Hogs	.5@7¼
Wethers, No. 1	.4@4¼
Milk lambs	.5@5¼
Ewes, No. 1	.3½@3¾

Potatoes.

Wholesale market quotations:

River whites	.1.00@1.75
Sweets, lb	.5
Early Rose	.1.00@2.00
New Burbanks	.1.00@2.00

Onions.

Red, new, sack	.90@1.00
Silverskins	.1.35@1.50
Garlic, lb, new	.3@4

Vegetables.

Wholesale quotations:

Asparagus, box	.1.00@2.25
Beans, string	.1@1½
Beans, wax	.1@2
Bell peppers	.10@15
Carrots	.60@75
Cucumbers, box	.35@40
Corn, sack	.1.25@1.75
Chili peppers, box	.50@85
Celery, crate	.1.50@2.50
Egg plant, box	.1.00@1.25
Cauliflower, doz	.75@1.00
Egg plant, lb	.10@15
Lettuce, crate	.75@2.00
Okra, box	.1.00@1.25
Peas, sack	.1.00@1.50
Summer squash, lug	.35@40
Tomatoes, lug	.60@75
Turnips	.60@75

Citrus Fruits.

Valencias	.2.50@3.00
Grapefruit	.1.00@2.75
Lemons	.2.00@6.00
Limes, Mexican	.6.50@7.00

Fresh Fruits.

Apricots, crate	.80@1.00
Apples, Early Harvest	.75@1.00
Apples, box	.25@2.00
Apples, new, green, 20-lb box	.50@1.50
Cantaloupes, ponies	.1.75@2.25
Cantaloupes, standard	.2.25@2.75
Cantaloupes, Rivers	.2.00@2.25
Nutmegs	.1.50@2.25
Cherries, white, lb	.4@5½
Cherries, black, lb	.6@8
Cherries, white and red	.60@90
Currants, chest	.8.00@9.00
Figs, layer	.90@1.00
Grapes, Thompson Seed, crate	.1.50
Grapes, Malagas, box	.1.15
Grapes, Muscats, box	.1.25@1.50
Peaches, box	.60@90
Pears, box	.1.75@2.00
Plums, box	.50@75
Plums, Tragedy, box	.60@85
Loganberries, chest	.2.50@3.50
Blackberries, chest	.2.50@3.00
Raspberries, chest	.4.00@6.00
Strawberries, Banners	.5.00@6.00
Longworths	.4.00@6.00
Malindas, chest	.4.00@5.00
Pineapples, Hawaiian	.2.00@3.50
Bananas	.1.00@1.50
Watermelons, lb	.1½

Dried Fruits.

FRUITS—1911 crop, f. o. b., carload lots, per lb.—Apples, 9¾@11c; Apricots, 14½@16½c; Peaches, 10@11½c; Prunes, bulk basis, 4¾@6c; per lb., 4@8¼c, with a premium of ½@1c on large sizes; Figs, 5@6c for White; Pears, 11@14¼c.

RAISINS—1911 crop; Seeded, per pkg. —Fancy, No. 16, 7@7½c; Choice, No. 16, 7@7¼c; Loose Muscatels, in 50-lb. boxes—Standard, 4-crown, 6½@6¾c; do, 3-crown, 6c; do, 2-crown, 5½c. Seedless—Muscatels, 5c; Sultanas, 6¾@7¼c; Thompsons, 7@7½c.

Nuts.

Walnuts, No. 1 soft shell	.16@16½
Walnuts, No. 1 hard shell	.14½
Almonds, '10, N P U	.16@16½
Almonds, '10, Nonp	.18@18¾
Almonds, '10, I X L	.16½@17¼
Pecans	.14@17
Chestnuts, California	.6@8
Peanuts	.5@5½

Beans Dried.

Limas	.5.75@6.15
Pink	.4.80@5.00
Black eyes	.6.00@6.25
Small white	.3.50@3.60
Large white	.3.25@3.40
Kidneys	.5.25@5.50
Garbanzos	.2.50@3.25
Bayou	.3.75@4.00
Horse beans	.2.50@3.50
Red Mexicans	.5.00@5.25
Cranberry	.3.75@4.00

Hops.

Hops, coast, 1910	.23@25
Hops, 1911 contracts	.22@25
Hops, Oregon, 1911	.22@25

Honey.

Water white, comb, '11	.15
Dark comb	.12½
Extracted white, '11	.9@10
Extracted dark	.6½
Beeswax, lb	.24@30

Hay.

Scott, Magner & Miller say:

Receipts have sharply increased during the past week, the amount which we have received totaling 3700 tons. Arrivals by railroad were larger than heretofore, and during the last six days quite a fleet of boats have arrived. Quite a little coming by boat has been alfalfa hay. There is a firmer feeling generally covering the entire situation.

In several of the large districts there has been somewhat of buying going on this week, and quite a few lots have changed hands both for storage purposes and for current trade demands. There has been verry little hay sent out of the harbor recently on export or on coastwise shipments, and it is not expected that there will be any particular activity in this line of trade in the early future.

There has been somewhat of alfalfa moving into market, although the demand for this article at present is rather moderate. No large buying has been done, the operations being mainly confined to small purchases for immediate requirements.

Fancy wheat hay	.14.50@15.00
No. 1 wheat or wheat & oat	.12.50@13.50
No. 2 wheat or wheat & oat	.11.00@12.00
Choice tame oat	.13.00@13.50
Other tame oat	.9.00@10.50
Wild oat	.9.50@10.50
Stock hay	.5.50@6.50
Alfalfa	.9.00@10.50
Straw, bale	.45@55

Grain.

Wheat	.1.42½@1.50
Barley, fancy	.1.30@1.30¼
Barley, good to choice	.1.27½@1.28¾
Oats, white	.1.50@1.60
Rye	.1.42½@1.47½
Mustard, brown	.5¼
Alfalfa seed	.18
Millet	.3@3½
Flaxseed	.5@5½
Brom corn seed, ton	.25.00@30.00

Feed Stuff.

Alfalfa meal	.14.00
Bran, ton	.28.50@30.00
Feed cornmeal, ton	.37.00@38.00
Cracked corn	.38.00@39.00
Rolled barley, ton	.27.50@28.50
Rolled oats, ton	.29.00@30.00
Middlings	.32.50@35.00
Oil cake meal	.42.00@43.50
Cocoanut cake, ton	.25.50@26.50
Mixed feed, ton	.25.00@27.00
Shorts	.29.00@31.00

Deciduous Fruit Market

F. B. McKevitt, general manager of the California Fruit Distributors, reports:

Sacramento, July 22, 1911.

The following gives number of cars of deciduous fruit shipped from all points in California for the week (7 days) ending Friday morning, July 21, 1911:

Cherries—One car. There have been no cherries shipped since the 19th, when one-half a car was forwarded. The movement is now finished.

Apricots—10½ cars. Although over ten cars of this fruit is reported, this is an error, as nine cars destined to local canneries were erroneously included by the railways in their report. The actual movement of this fruit from the state should, therefore, be reported as one and a half cars. This concludes the shipment for the season.

Peaches—71½ cars. As indicated in our letter of last week, the quantity of peaches going forward has been rather limited, being about twelve cars less than for the preceding seven days. Fruit has not been ripening as rapidly as expected, but during the next week we expect to see a considerable increase in the output. Early Crawfords and Fosters will be the principal varieties. The crop is generally light. Elbertas cannot be expected in quantity much before the first of August.

Plums—157 cars. As expected, the shipment of this variety has dropped off, and it probably will continue to do so during the remainder of the season, although there are very considerable quantities left and shipment will be maintained in fair volume for some time. Tragedies are nearly done. Most of the Santa Rosas have been shipped. Diamonds are still very scarce, but will be more plentiful at the end of the week. Some Yellow Eggs will be available about the same time.

Pears—155¾ cars. The output of Bartletts from the river is disappointingly small. This should have been one of the heaviest weeks, whereas it is comparatively light. It is not expected that there will be many more shipped next week than this. Thrips is reported at work in some sections, and may have the effect of further reducing the small quantity offering. The demand is very strong and it has been impossible to supply all that have been asked for.

Grapes—18 cars. Thompson Seedless and Malaga are being shipped from the Imperial district. These varieties will not appear in quantity in the central portion of the state for several days yet. There should be a considerably increased movement from the southern districts during the coming week. Fontainbleaus are going forward from the northern districts in increasing quantities, but there will not be enough of them to cut much figure.

Weather during the past week has been favorable, generally speaking. The last two or three days have been considerably cooler than those preceding them and this has had the effect of making a considerable increase in the mildew which has been heretofore noted as appearing in several sections. Otherwise the grape crop is looking fine.

Citrus Fruit Market

LOS ANGELES, July 26, 1911.

The astonishing results being secured in the marketing of the immense crop of citrus fruits this year are attracting attention to the value of co-operation in the marketing of our products. The production of oranges in such an immense quantity was the cause of early predic-

Cream Separators, all sizes and prices. Guy F. Kelsey & Co., 106 East Eighth St., Los Angeles, Cal.

tions of disastrous prices, but at no season of the year have there been prices which were disastrous or even the least bit discouraging. There are many factors which enter into the firm condition of the markets, but we believe greater than any other one is the powerful balance wheel in the California Fruit Growers' Exchange.

Valencias are going forward very liberally and present indications are that the market will hold firm until the close of the season. Fancys are commanding $3.00 to $3.25 f. o. b. California.

Lemons are not commanding the extreme prices of two weeks ago. In fact, there has been a material decline. This is principally because of the change in weather conditions and to a slight extent to heavy receipts of foreigns.

Shipments.

Shipments of oranges to date since November 1st, 1910, 34,032 cars, lemons 5,705, total 39,737. To same date last season: Oranges 23,356 cars, lemons 3,875, total 27,231.

NEW YORK, July 24.—Fifteen cars Valencias, one car seedlings and one car grapefruit sold. Market higher on oranges. Cloudy and warm.

VALENCIAS—	Avge.
Titus Ranch, fy, San Marino G P A.	$4.15
Mahala, L V W Brown	4.25
Swastika, ch, L V W Brown	3.95
Shamrock, fy, Placentia M O A	6.15
Caledonia, xch, Placentia M O A	4.55
Albion, ch, Placentia M O A	4.25
Old Mission, ch, C C Chapman	4.65
Golden Eagle, sd, C C Chapman	4.35
Euclid, or, Growers' Ft Co	4.60
Uplander, or, Growers' Ft Co	4.25
Corona	4.35
Corona Standards	4.00
Glendora Heights, fy, A C G Ex	5.15
Glendora Heights, ch, A C G Ex	4.55
Evolution, A C G Ex	4.30
Lotus, O K Ex	4.65
Monogram, O K Ex	4.25
Diamond S, O K Ex	3.95
Iris, D M Ex	4.75
Violet, D M Ex	4.45
Jasmine, D M Ex	4.05
Nonpareil, Covina Ex	4.30
Whittier, S T Ex	4.40
Pico, S T Ex	4.10
Red C, Covina Ex	4.25
Cougar, Covina Ex	4.10
Tallyho, S B Ex	4.35
Iris, D M Ex	4.70
Violet, D M Ex	4.25
Jasmine, D M Ex	4.30
El Azar, A C G Ex	4.10
Squirrel, A H Ex	3.90
Prairie Chicken, A C G Ex	3.60
El Toreador, sd, San Marino G P A	3.40
Premium, or, Benchley Ft Co	4.70
Superior, ch, Benchley Ft Co	4.10
SEEDLINGS—	
Titus Ranch, fy, San Marino G P A.	3.75
GRAPEFRUIT—BOXES—	
Tallyho	2.75
Big R	2.00
Squirrel	2.15
Palm Tree	1.20
HALVES—	
Old Mission	4.00
Golden Eagle	3.10
Corona Standard	1.85

BOSTON, July 24.—Ten cars sold. Raining. Market strong on oranges, easier on lemons.

VALENCIAS—	Avge.
Squirrel, A H Ex, Prenda	$3.35
Pet, S A Ex	4.65
Robusta, A H Ex, Pachappa	4.75
Hobo, A H Ex, Pachappa	4.35
Urchin, S T Ex, Fernando	4.25
Glendora Hghts, xch, A C G, Glen.	4.85
Rey, S T Ex, Fernando	4.70
Urchin, S T Ex, Fernando	4.25
Quail, O K Ex	4.55
Standard, sd, National Og Co	4.10
Palm Tree, A H Ex, Prenda	2.65
Alta Cresta, A H Ex, Pachappa	5.00
Robusta "R," A H Ex, Pachappa	4.70
Tunnel, S T Ex, Fernando	4.40
Glendora Heights, xfy, A C G	5.05
Evolution, A C G Ex, Glendora	4.60
Tunnel, S T Ex, Fernando	4.50
Pinnacle, O K Ex	4.80
Orchard, or, National Og Co	4.65
LEMONS—	
Hiddendale, E C U, Escondido	3.30
Peerless, Stewart Ft Co	4.20
Del Diablo, E C U, Escondido	3.00
GRAPEFRUIT—HALVES (Seedless).	
Hobo	1.85
Robusta	2.00
Oorchard	2.45

PITTSBURG, July 24—Six cars sold. Market steady on oranges, lower on lemons.

VALENCIAS—	Avge.
Echo, S T, Arroyo Park	$4.65
Iris, D M Ex, Monrovia	4.95
Jasmine, D M, Monrovia	4.25
Naraliimo, or, Sparr Ft Co	4.50
Plain Ends	3.85
Arroyo, S T, Arroyo Park	4.35
Violet, D M, Monrovia	4.55
Golden Pheasant, xc, Ind Ft Co	4.25
Circus, xc, Sparr Ft Co	4.30
LEMONS—	
Monticello, S W, Bonita	4.15
Family, Q C Ex, Corona	3.40
Camel, Q C Ex, Corona	4.15
Plain Ends	3.50

PHILADELPHIA, July 24.—Four cars Valencias, two cars lemons sold.

VALENCIAS—	Avge.
Stag, A C G Ex, Glendora	$5.05
Eagle, A F, Highgrove	4.35
A One, xc, E Peycke Co	4.50
Brownie, fy, Rialto Ft Co	4.20
Pointer, A C G, Glendora	4.65
Yankee Doodle, A F, Highgrove	4.05
Cove	4.25
LEMONS—	
Coyote, O K Ex	2.85
Excellent, S P, Santa Paula	4.25
Mars, xc, E Peycke Co	3.20
Blue Jay, O K Ex	2.65
Sunside, S P, Santa Paula	3.75

CLEVELAND, July 24.—Two cars Valencias, one car lemons and one mixed car sold. Market strong on Valencias, unchanged on lemons. Quite cool. Cloudy.

VALENCIAS—	Avge.
Tallyho, S B Ex, Rialto	$4.20
Cougar, Covina Ex, Covina	4.10
Red C, Covina Ex, Covina	4.25
Alhambra, S T Ex, E Alhambra	4.30
LEMONS—	
Red Ensign, O K Ex	3.85
White Ensign, O K Ex	3.55
Buck, O K Ex	2.90

CINCINNATI, July 24.—Cool. Market strong on Valencias, weak on lemons on account of weather. Two cars Valencias and two cars lemons sold.

VALENCIAS—	Avge.
Pico, S T, Whittier	$4.00
El Capitan, S A Ex	3.95
Pet, S A Ex	4.10
LEMONS—	
Rough Diamond, V C, Haines Spur	2.45
White Cross, V C, Haines Spur	3.35
Bridal Veil, V C, Haines Spur	3.95
Lighthouse, sd, Randolph Ft Co	2.75

ST. LOUIS, July 24.—Cool. Six cars sold. Market strong on Valencias, weak on lemons.

VALENCIAS—	Avge.
Colombo, S T, Placentia	$4.15
SS, S S Ex, Orange	3.45
Partridge	3.95
Searchlight, S S Ex, Orange	4.35
Red Star, xc, Randolph Ft Co	4.00
LEMONS—	
Sardonyx	3.35
Economy, ch, Randolph Ft Co	2.60
El Toro	1.95
Green Crown, A C G, Azusa	2.80

Milk Coolers, all sizes and prices. Guy F. Kelsey & Co., 106 East Eighth St., Los Angeles, Cal.

On the next *Studebaker* Wagon you pass on the road

Why aren't they split and cracked like the ordinary wagon?

Because the ordinary wagon hub is made from oak, a wood that splits and cracks very easily, while

Studebaker WAGON

hubs are made from *Eastern black birch*, a very springy, tough wood, chemically treated, with great weather resisting qualities.

Western birch is used by some manufacturers, but it is even poorer than oak. It is *brashy* and will not stand the strain.

Studebaker hubs cost more than any other hub on the market, but they are stronger and wear longer.

Another reason why you should buy a *Studebaker* from

Newell Mathews Co.
Established 1886
Los Angeles, Cal.

ACCEPT GENEROUSLY.

"They are very fine people in every way, except"—the charitable minded acquaintance hesitated—"except that they don't know how to accept a kindness. They know how to give freely, but not how to let others have the pleasure of giving to them."

This is a phase of selfishness rather common and often quite unrecognized. The reward of giving may be in the satisfaction of the one to whom the gift is made, but it is not in a material return of the gift.

"I used to like cutting my daffodils to give my next neighbor," said a cordial neighbor, "but I found she would order flowers from the greenhouse to send back to me, and I couldn't keep on."

To stay in debt to another for kindness is sometimes the very sweetest way of returning the favor. The enjoyment of the pleasure of giving thus stays the longer with the giver. Appreciative thanks, lasting remembrance, a sense of delicate loyalty due to the giver in many different ways, these are the just returns for a favor rendered. Better than all else is the favor passed on to another, with the added word if may be, "So-and-so was kind to me about this, and I want you to share it, too." It takes real humbleness and a truly generous heart to be thus a grateful recipient of a generous and often a humble gift.—Ex.

EXPLAINED.

The Cannibal King: See here, what was that dish you served up to me at lunch?

The Cook: Stewed cyclist, your majesty.

The Cannibal King: It tasted burnt.

The Cook: Well, he was scorching when we caught him, your majesty.—Sketch.

RATHER PERSONAL.

Blinks (after the dispute)—Well, you ain't two-faced, anyway.

Squints—Yer admit that then?

Blinks—Yes! if you'd got another you'd have left that one at home.

Do it well. Whatever you undertake, put your whole life into it, and accomplish it in the best manner it is possible for it to be done. The business world wants a man who is thorough, and that man very soon climbs to the top.

Customer: "See here! I thought you said these things would grow in any climate." Dealer: "They will. But if you want them to grow in this climate you've got to have a hothouse for them, of course."—Puck.

Father: "Well, Reggie, how do you think you would like this little fellow for a brother?" Reggie (inspecting the new infant somewhat doubtfully): "Have we got to keep him, papa, or is he only a sample?"—Tit-Bits.

An essential for success is hard work. No man ever gets to the top round of the ladder without striving for it. Read the stories of great men, and you will find that their lives were lives of hard work.

It will be noticed that lemons are often utilized in cooking oranges. It is because cooking somewhat detracts from the delicate flavor, the characteristic of the orange, while that of the lemon, far more decided, harmonizes and helps replace the evaporated flavor of the orange.

MOTORING IN NORTH AFRICA.

A timely paper of the August Century (the Midsummer Holiday Number) will be an account of "Motoring in Algeria and Tunis"—from Algiers to Constantine and Biskra—by Abigail H. Fitch, in which the writer tells of the network of wonderful highways France has built through North Africa, of the unexpected comfort of a tour there, "without further guidance than good road maps and occasional inquiries from French-speaking people, and of many other details of interest to travelers and motor enthusiasts.

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Merced County, in the San Joaquin Valley. 3000 acres in small tracts. Rich sandy loam soil, Santa Fe railroad crosses land. Two shipping stations. Surrounded by a highly productive district. Abundant water.

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Please send particulars on Merced Colony No. 2
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Los Angeles, Cal.

AUCTION

35 Fine Dairy Cows, Horses, Hogs, 1 Bull
At my place, 1½ miles southwest of Gardena.

Take San Pedro cars at Third and Main or Hill St., via Gardena to McKinley Home. Walk quarter mile west.

Tuesday, August 1, at 10 o'clock a. m.

Thirty-five dairy cows, many now fresh and giving large quantities of milk, others coming in soon, nearly all large Holsteins and Jerseys and Durhams, all young and in the very finest condition. In fact this is one of the finest dairy herds in Southern California. Intending purchasers are requested to come and see these cows milked any day prior to sale.

One team of horses, 6 and 8 years old, weight 900 pounds each—good delivery team. One draft horse 10 years old, weight 1300 pounds—good work horse. One 3-year-old Holstein bull. Three brood sows, one with pigs at side. New portable stanchions with corrugated iron roof.

Terms: $100 and under cash; over $100, one-third cash, balance 6 months' time with bankable note and 8 per cent interest; 5 per cent discount for cash on time sums. Free lunch at noon.

Buyers looking for first-class dairy stock should not fail to attend this sale. Mr. Sorenson is retiring from the dairy business and has instructed us to dispose of this herd positively without limit or reserve.

Albert Sorenson, Owner.

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830 South Main St. Los Angeles
AUCTIONEERS.
Phones: Main 1259, F1259.

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Our 30 H. P. has wheels 7 feet high and the 40 H. P. 8-foot wheels.
HAWLEY, KING & CO. sold 9 of these ENGINES last fall and they "MADE GOOD." One customer plowing 1600 acres, often 40 acres per day, and hauling 24 Plow Bottoms and 20 feet of Harrow.

The "FLOUR CITY" is the acme of strength, lightness and durability.

Our Catalog tells the story. Send for a copy.
All sizes on hand. Call and see them.

Flour City Gasoline Engine

That's what pays my Profits.

You Can Buy

A { 20 H. P. for $2,000
30 " " " $2,600
40 " " " $3,500

The Same Price they sell for in the East
—from—

Hawley, King & Co.

Sole Agents for California
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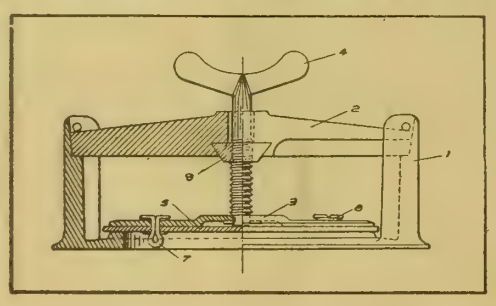
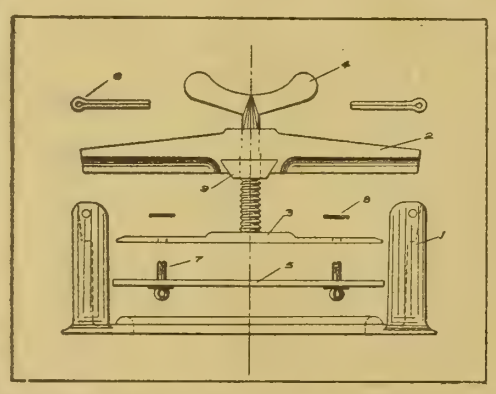
LOS ANGELES, CAL.

Dealers in Farm Implements and Vehicles

POMONA CIRCULAR VALVE





THE main object of the Pomona Valve is to construct a very cheap and simple valve, and one that requires no special tools or wrenches or experience to operate.

The Pomona Valve is constructed with non-corrosive parts, thus insuring a workable valve regardless of infrequent use. All fastening held in place by cotter pins, thereby making a very cheaply constructed valve and yet a very substantial one.

Valve Parts

1 Frame	5 Gasket
2 Cross Bar	6 Cotter Pin
3 Top or Lid	7 Cotter Pin
4 Brass Thumb Screw	8 Cotter Pin Washer
	9 Brass Nut

Write for Catalogue

POMONA MANUFACTURING CO.

POMONA, CALIFORNIA

Why Experiment with Inferior Pumps?

Buy a pump built on the Pacific Coast, and adapted to your needs.
Our pumps have been in use and on the market for years, and have stood the test of time.
Buy direct and save freight and jobbers' profits. Live, erecting agents wanted. Our retail prices are less than our competitors wholesale prices.

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125-127 O St. Sacramento, Cal.

Thoroughbred Poland China Swine
Barred Rock Poultry
High Grade Stock of Best Strains.
Young Stock for Sale.
M. Bassett ***Hanford, Cal***

The Whiting Jersey Stock Farm Co.

Is making the very best strains of blood from the island of Jersey a specialty. **Whiting Jersey Stock Farm Co. Heber, Cal**

We Are Now Developing Water

—for—

CALIFORNIA'S LARGEST LAND CORPORATIONS

GREATEST WATER DEVELOPERS

ON THE FOLLOWING TRACTS

Fifty Thousand Acre Ranch
Hundred " "
Large Sugar Refinery
Large Cattle Interest
Hundreds of Small Ranches
Citrus Fruit Groves etc.

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A scientific water developer that will deliver the maximum amount of water at the minimum cost.

The Layne System Pat'd Centrifugal Pump, Pit and Screen

Our New

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Is Ready

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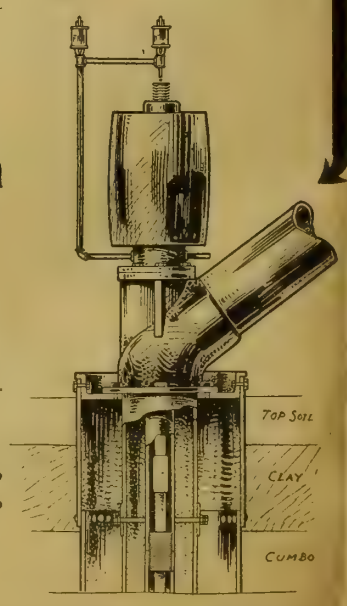

Showing the discharge pipe and pulley above the surface of the ground.

The Big Weekly { Fifty-two issues, each containing from 24 to 32 pages of practical information, } For $1 the Year

CALIFORNIA CULTIVATOR

An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch.

LOS ANGELES AUGUST 3, 1911 SAN FRANCISCO

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This practice in connection with our well-known motto:

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has given us the largest volume of business in this line in the Southwest.

Give Us a Personal Call and if you can't call at the house write us a list of your wants

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Water

The Wonder Worker in Agriculture has effected the transformation from level plains supporting only odd forms of vegetation which possess not much value, to beautiful green, smiling fields.

IRRIGATION HAS DEVELOPED A NEW ERA IN AGRICULTURE

The Greatest Water Developer in the World and that produces the maximum quantity of water at the minimum cost is the Layne System

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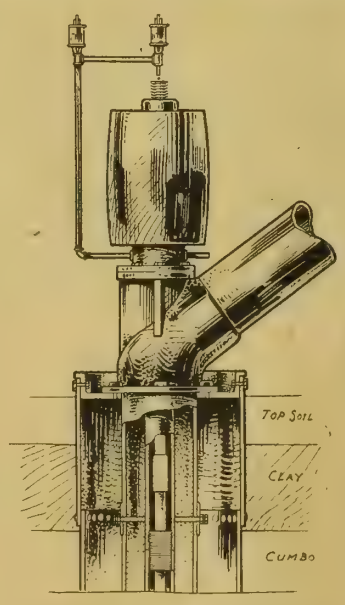

Showing the discharge pipe and pulley above the surface of the ground.

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No tract in the West is better supplied with water. It all comes from artesian wells which flow 100 miner inches and more each. Some of these wells have been flowing 25 years.

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is level and equal to the best for grain, hay, alfalfa, vegetables, general farm crops, cotton and rice. Is located 6-12 miles west of Santa Fe R. R. in Kern County, the nearest shipping points being Wasco and Elmo.

One acre produced 15 tons of onions, which brought $900.

MARKET

There is a good market for all hay and dairy products on the ground and in the Devil's Den, Lost Hill, McKittrick, Midway and Sunset Oil Fields, which lie west and southwest from Kern Meadows. Cream brings the highest market prices, collected at the dairy, and creamery company pays express charges from Wasco. Shippers facilties are complete for delivery by rail.

A Farmer Can Make Money on This Land.

Preference of employment on the company's improvement work will be given residents on the land.

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Dried Milk for Fowls

Nothing better, especially in hot season; nearly 50% protein
Special prices for short time only:

Harding's, $3.50
Casein Co.'s, $3.50
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5 Sacks 15c and 10 sacks 25c less

WEST COAST SEED HOUSE

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Catalogs of Everything for Poultry and the Garden

California Cultivator

Vol. XXXVII. No. 5. LOS ANGELES: THURSDAY, AUGUST 3, 1911 One Dollar the Year

Why and Wherefore in Soil Fertility

Address by Prof. C. B. Lipman, of the University of California, Before the Claremont Pomological Club at Pomona, July 15th

Most of us are dominated by inherited instincts and are ready to follow glibly in the footsteps of our ancestors. Nevertheless to progress we must know the whys and wherefores. We have been advised to plow deep, so far as the grain farmer is concerned, ten and twelve inches, if possible, for alfalfa 16 inches, but why are these recommendations made? A man naturally is averse to taking certain forms of advice without knowing the reasons why. This week I recommended to a certain orchardist a practice which might hurt his trees for this year, and naturally he was averse to trying it until I gave him my reasons for recommending it, until I showed him how I had worked it out and that he might expect much better results the next year if he applied it.

You cannot do anything which takes a high grade of intelligence without training in observation, a training in schools if you wish, in books, but a training of some kind, the more thorough it be, the better. Agricultural education is a good thing; extension work in agriculture is a good thing, but I consider of more importance a better general education of all the people whether they live in the country or in the city, with this idea in mind, that the properly trained mind, whether it obtains its training in one field or another of human knowledge is the one which will be able to reason out its own problems, to plan its own system of work, to grapple with the more difficult problems which take certain kind of training.

Mr. Jones of Pomona, Mr. Mills of Riverside, did not have agricultural training, yet they are making big successes; Mr. Neff at Anaheim had no special training for his work, but he got the training by personal observation, by careful and continued reading, which sharpened his wits and put his mind into a receptive condition which made it possible for him to work out his own plans, his own system of farming. He got hold of certain principles enunciated by scientific minds, which he could profitably put into operation in his place.

Application to Conditions.

There are certain troubles in our groves, some of such an extent that many have claimed the groves were decadent. The percentage of decadence has gone so far that some orchardists have taken strong measures to increase the efficiency of every tree and every acre. My answer to this opposition is that I don't believe any one man is going to solve your problems for you. I don't believe that one or two or a half dozen experiment stations can solve them for you. There are certain things we must know in agriculture as well as in other fields of endeavor. The problems which come to the grower should be settled largely by the grower himself. They will never be settled satisfactorily until every grower undertakes a little experiment station on every acre for himself.

The University and other experiment stations in other states, and the Department of Agriculture at Washington are glad to give the benefit of their experience, yet every grower should know the requirements of his own soil.

In irrigation, for example, a certain kind of soil allows water to spread laterally to a certain distance, but a plan worked out for this certain soil will not apply to others. You can't apply a system worked out for coarse soil to a clay loam. We cannot make a general rule, I don't care how many years you run a citrus experiment station at Riverside, for every grove in California. The station there is on clay soil and the experiments conducted there apply only to that particular type of soil.

Every man should have his own experiment station situated on a piece of his land. If you can't do the work yourself, get a good man to do it for you, but get one of your own number to work on your particular soil. Each one of you can give a little piece of land for trying out fertilizers, green manuring, or plans for irrigation. Of course, we must have an irrigation engineer to tell us that water will do certain work, how it runs from a certain watershed, where the water table is. What fertilizer company to buy from, which is more economical to use, fertilizer in mixed form or simple; these things the experiment station can work out, but the particular kind to apply, nitrate of soda or ammonium sulphate, you ought to find out for yourself, and can do it. You can do it more efficiently and with better results than any man in the center of a large district can do it for you.

Experiment stations should tell why certain operations are recommended. We should plow deeply because we have deep soils and our water percolates downward and the root systems are far deeper than in humid sections where rain falls the year around. Then by keeping dust mulch on the surface you allow the root system to spread without hindrance, for the larger amount of water you retain the larger amount of plant food is carried in the soil water.

Chlorosis.

In this state we have been searching out the causes of chlorosis. One man comes along and tells us it is due to excess of a certain chemical in the soil. We all have said a certain thing was responsible. One man said it was lack of lime, but didn't tell why. As to the lime-magnesia theory based on the writings of Dr. Loew, Dr. Loew demonstrated that as soon as the percentage of lime or magnesium rose to a considerable extent above a certain ratio, there was formed a compound with nitrogenous matter which produced a condition similar to disease. In other words, he found that too much of any mineral substance combined with organic substances was unhealthy for the plant, whether lime or whether magnesium combined to make the trouble. This was worked out in a scientific way in soils and it was found that where a certain proportion of lime and magnesium existed, they mutually counteracted each other's ability to combine with nitrogen and so kept the plant in a healthy condition. We have found this true of other elements. Sodium has just the same antagonism for potassium, strontium is antagonistic to other elements, iron and copper seem to antagonize each other. This was the principle upon which Loew based his recommendations. But we cannot afford to lose sight of the fact that experiments with soils in small wire baskets give no indication of what is going on in the field. These results are established by scientists the world over, such men as Hilgard, King, Wagner, Schultz.

Essential Plant Foods.

Nitrogen, phosphorus and potash are the great triumvirate, but we have not told why. Nitrogen we are losing by leaching from rains and irrigation. Of the phosphates all soils naturally contain more or less; in most there is naturally a short supply, yet phosphoric acid is an important constituent of every living cell. The potash supply in most of our California soils is rather high, but it is wearing out like all other plant foods. You cannot constantly take it out and say that the same amount is left. Chemists can tell you just how many pounds you take out in a box of oranges. The heavier we crop naturally the more potash we lose.

Turning Under Cover Crops.

We have been recommending in sandy soils deep turning under of the cover crop; in heavy soils shallow incorporation of the crop, but why? If we put cover crops under three or four inches in light sandy soil, we get dry oxidation, too much oxygen, and the green manure dries up and oxidizes away and we lose the humus which is what we are trying to get. If we put it under where it won't decay we lose what we are after. In clay if it is put under deeply, there is not enough oxygen, gases form and acid substances detrimental to any plant except sorrel or others of that kind.

Plowsole.

The breaking up of the plowsole is one of the most important practices in the groves of California. I have lately visited dozens of groves where the auger put down eight or ten inches would strike a hard substance which it would take muscle to drive through. Fertilizers do not go through it and water does not go through it. This hard stratum may form through plowing to the same depth time after time. In most cases in the orange groves considerable layers of silt form in the bottom of the irrigating ditches, the lime cements the clay and silt, forming a layer not so impervious as clay, but still impervious to water. In some light soils which are regularly plowed three inches deep, its formation is likely due to plowing; in the wheatlands this is doubtless the cause. You can get rid of it by putting in your irrigation furrows a little shallower, say an inch, then when you plow after the irrigation, get under the plowsole with your plow and you will have the same depth of tilth.

The Why of Humus.

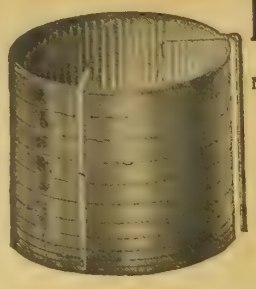
Our humus supply is low in California. With the exception of nitrogen it is the controlling factor in soil fertility here. Humus is produced by the decay of organic matter. During our long season of drouth, seven or eight months, there is formation of an exceedingly fine mulch wherein oxygen circulates exceedingly freely and the organic matter is rapidly burned away, so that we are constantly losing our humus, even if we turn under a good cover crop every year. In spite of our cover crops our supply of humus is perhaps going down a little. Even if we don't add to it we have to maintain it.

Our humus is rich in nitrogen as compared with soils in the East. Nitrogen is inert and tends to remain behind after the carbon and hydrogen evaporate away, but actually the total amount of humus is low. Humus is the source upon which we have to depend for our supply of nitrogen. We can apply nitrate of soda, a little dried blood, a little tankage, a little ammonium sulphate, but the ultimate supply of nitrogen upon which the productivity of every acre depends is the organic matter in the soil, left over from the decay of barnyard manure, weeds and falling leaves.

Humus is the home in which is carried on the activities of a body of organisms which are just as important as we are. We do not see them. They are exceedingly small. We call them bacteria. They are so important that life on this globe depends absolutely on them because of the fact that they are the scavengers; they produce decay conditions by which humus is made possible and they make soluble the insoluble nitrogen in the humus.

Humus is important because of the fact that it cements our soil particles in the sandy soils and makes them hold water better. Anything we can do in light soils to help hold water is a distinct gain in soil productivity, and we can do it in a measure by put-

(Continued on Page 102.)



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Write for Prices. Prompt Delivery. Good Goods. Right Prices.

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Parties contemplating the planting of citrus groves this coming spring will do well to send for our prices soon, as there will evidently be a shortage of strictly first class stock. Write today for particulars, or, better still, pay us a visit so that we may be able to show you just what we have.

Our finely illustrated booklet, "Citrus Fruits," covering the industry from the seed to the market, mailed to any address on receipt of 25c in stamps.

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Equivalent to 128-129% Cyanide Potassium, for generating Hydrocyanic Gas

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When writing advertisers, mention Cultivator.

Citrus and Tropical Fruits

CO-OPERATION.

California citrus growers are so well organized there may be nothing to learn from the more recent efforts of Florida along the line of co-operation. But there are surely other producing lines in this state which should be aided by an inspiring address recently made by Mr. W. C. Temple, manager of the Florida Citrus Exchange and printed in the Florida Grower. Mr. Temple's address is so filled with information that we give it almost in full.

Mr. Temple says:

Webster defines co-operation as "operating together to one end—concurrent effort or labor."

All harmony is the result of co-operation, whether it be of human effort or of the laws of nature. The seasons and conditions must co-operate to produce your fruit. God made nature and her laws, and the co-operation of these laws makes the universe. Without co-operation there is lack of harmony, discord and failure in everything. The co-operation of mind, will and body makes man and the works of man. The co-operation of man makes communities, sections, nations. The individual man is a helpless unit, an atom in the sea of existence. The co-operation of a body of men in a community makes for strength, and that strength is just in proportion to the strength of the co-operation of the community for the good of the community. When any community is imbued with the single spirit that the injury or success of one is the concern of all, it becomes a community of great strength. The co-operation of many communities produces a nation, and the strength of the nation is in direct proportion to the co-operation of the individual units comprising that nation for the welfare of the nation.

Specialize.

Imagine the spectacle of one man claiming to be "independent" of all other men and mankind, and yet endeavoring to live in the world. Fancy this man producing for himself, and by his own efforts, his hats, shoes, clothing, food, medical care and the results of art, literature and science; and yet the mass of men by co-operation, each specializing in the direction in which he is best fitted, can produce as one harmonious whole the very highest exemplification of all of these.

So, if a man tries to produce, doctor, improve and perfect his fruit, he has plenty to do; specializing in many directions, each in itself sufficient for a life study.

If he as an individual attempts, in addition to proper production, to gather, grade and pack his fruit, he adds further specialized work which can be better done by those who have specialized in that direction exclusively.

Massing One Product.

Aside from the additional study and knowledge required to do it well, the matter of tonnage—or amount of output—also looms large and important; the greater the output the lower the cost per unit of output. This is the maxim of all the big successful businesses of the day—increase your tonnage and you increase your efficiency and decrease your cost. As an instance, a packing house of ample capacity to handle easily and smoothly 150,000 boxes of fruit in a season, can handle 25,000 boxes at a cost of 60 cents per box, while with 150,000 boxes annually the cost would be less than 40 cents a box—a saving of 20 cents a box, or more than enough to build the house, in one year; and, in addition to that, the work at the lower figure will be better done, and more uniformly, paradoxical as it may seem.

Suppose the transportation to market was attempted by individual effort. This would necessitate teaming from the grove to New York, or Chicago, or New Orleans, with the team in charge of the owner—unthinkable, isn't it? And yet that is what individualism means. From the co-operation of millions of individuals and thousands of classes of product the railroad is born and operated, increasing its efficiency with increasing tonnage.

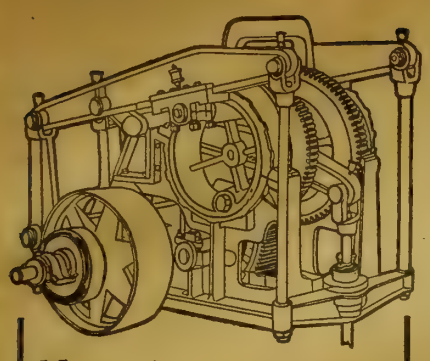
Advertising.

After the specializations of grading, packing and transportation are properly attended to and the facilities for them are perfected, comes the most vital and highly specialized work of all—creating a demand, at a profit, for the product.

Do you question the statement, "creating a demand?" You have been accustomed, perhaps, to hearing the old familiar jargon about the "laws of supply and demand." This is a misnomer. There are no such laws. The terms are purely fictitious. You may create all the supply you wish and yet have no demand. Inversely, you may create a demand for almost anything thinkable, without a supply. The question arises, "How is a demand best created?"—by having a good article, that you know people should use, then letting them know you have it, then putting it in their hands in proper quantity, quality and condition—and at the proper time. Thus demand not only can be, but is created. Except for a few bare necessities of life, demand is never found ready-made for anything.

The father and originator of great advertising campaigns, William Morgan, who first invented, discovered, or fabricated—whichever you please—"Sapolio," in answer to a question from his partners to the effect, "Do you mean to tell us that you can mix sand with soap, and by advertising sell it as a new article?" answered, "I can by advertising sell mud for chocolate," and he could—once, but never more than once to the same customer. But if you have a good article your demand can be made continuous and increasing.

I am informed that Mr. Atwood has spent $25,000 in a single year for advertising his grapefruit, and I presume that he found that it paid, as he continues it. This is an indication of individual effort—there is probably no other grower in the State of Florida who could afford to spend this amount of money in one year's advertising, as this amount of money would cost Mr. Atwood nearly 50 cents a box on his crop; but the California Fruit Growers Exchange this year will expend approximately $120,000, or nearly five times the amount of Mr. Atwood's expenditure, in advertising the California product—and yet it only cost a cent a box. This is due to co-operation, "operating together to one end," and incidentally their operating together to that one end is rapidly



New Straight Line Deep Well Working Head Single and Double Acting, Overlap and Quick Return Stroke, no Cross-head; High Efficiency. . . .

Goulds Triplex Pumps
Require Less Power for Operation than any Other Type.

Centrifugal Pumps
Horizontal and Vertical.

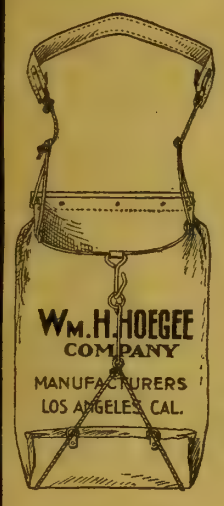
Lambert and St. Mary's Distillate Engines, Especially Designed for California Fuels. Easily Operated; Few Moving Parts; Economical of Fuel.

LET US FIGURE A PLANT FOR YOU **FREE**

We can show you how to keep operating expenses down.

SMITH - BOOTH - USHER CO.
228 TO 238 CENTRAL AVE.
LOS ANGELES, CAL.

Canvas Goods



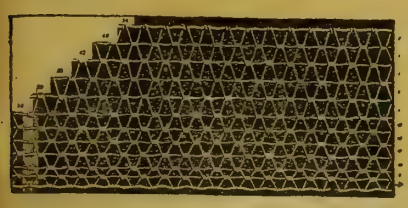
Picking Bags,
Fumigating Tents,
Lemon Curing Tents,
Stack Covers.

Heavy Canvas Construction Roll Duck, Burlap.

Canvas and Khaki Suits for Men and Women.

The Wm. H. Hoegee Co. Inc.
138-142 So. Main Street
Home 10087. Main 8447 LOS ANGELES

SELF REGULATING



STRENGTH
DURABILITY
ECONOMY

Mail orders a specialty.
Catalogue with Factory Prices Free.

California Anchor Fence Co.
Main and Grant Sts.
STOCKTON, CALIFORNIA.

SEED BED STOCK FOR SALE

Why not buy the best? 2 year old sweet stock all first class, clean, and well rooted. 25,000 one-year Sour Seed Bed Stock 8 in. and up.

T. J. LOCKE
Home Phone, Black 177
27 N. Stoneman Ave. ALHAMBRA, CAL

Sugar prune, pear and peach shipments began from Chico July 15.

bringing about another end, which, if not intended by them, is none-the-less serious to us; that is, the tendency to make the fruit consuming public of the United States forget that Florida is still producing oranges.

Overproduction.

We hear much about over-production of citrus fruits. Our advertising slogan is, and must be, "drink the juice," and coupled with that the advice to the consumer to "buy by the box." If we will co-operate and advertise to this end and we can create a demand for oranges by the box, and a thirst on the part of the general public for orange juice that might make it as popular a beverage (and it would certainly be a much more delicious and healthful one) as beer; and while you may not know it, if the average consumption, per capita, of orange juice per year by the citizens of the United States, was as great as their consumption, per capita, of beer was in the year 1910, it would require 300,000,000 boxes of juicy Florida oranges to furnish the juice, or something more than ten times the biggest crop in the history of the industry, from all citrus sections of the United States, California included.

This kind of a campaign can be conducted by co-operative effort, and in no other way. No grower, or local set of growers, in California could, without bankrupting themselves, carry on the advertising campaigns that California is carrying on, but by co-operation, they do it at a cost so slight that no one feels it.

If the Florida Citrus Exchange controlled two-thirds of the citrus crop of Florida, furnished to it ripe, it could distribute and market it perfectly at a cost of 6 cents a box, and spend $50,000 a year for an initial wedge in an advertising campaign. With the proportion of the crop we now handle it costs us 12 cents a box, without advertising—and at that, 12 cents a box is a far cheaper charge than that of any other agency operating in the Florida citrus deal.

Profits to Grower.

You hear a good deal of alleged 10 cents a box agencies, which, when the searchlight is applied, turn out to be nearer 30 cents a box than 10; and nobody could be deceived in this matter if the grower used the same intelligence in demanding a proper account of sale with his remittance as he shows in demanding an itemized bill when he buys his groceries.

Anything in a marketing line that can be done by an individual can be done by a co-operative body of individuals; and, inversely, anything in the marketing line that can be done by a co-operative society can also be done by an individual; provided, the individual has the time, ability and money to do it with; but there will be this difference in the end, which is the important difference for the grower, and that is, that when the individual undertakes, with a sufficient amount of capital and ability, to perform a service of this kind, he also undertakes to transfer to his bank account an amount of money in profit that is fully commensurate with the difficulty and risk of the operation, while in the co-operative society these profits go to you—the producer, and the one who co-operates.

(Concluded Next Week.)

The Kings County Fair Association is advertising its coming fair with a banner one by two inches in the form of a badge to be worn on Kings County coats. The date is September 25-30.

WARNING

To the Orange Grower

Insist on using only

Sulphuric Acid

made from Pure Virgin Sulphur when your trees are fumigated.

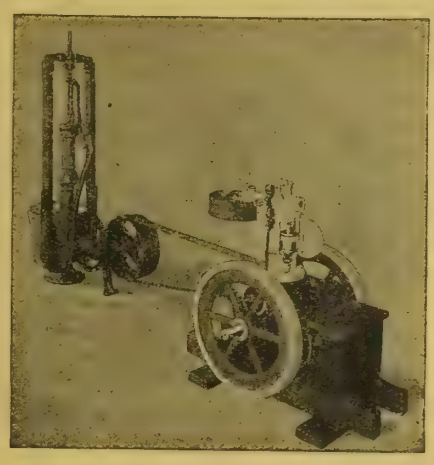
Acids made from waste fumes of the smelters contain arsenic, lead, copper and nitrous fumes, which are exceedingly dangerous to your trees, and may cause you no end of trouble.

Insist on using

Braucco Quality Sulphuric Acid

California Drug & Chemical Co., Inc.
Successors to Braun Chemical Co.

843-855 Stevenson Ave. - Los Angeles



The **Puritan** Engine

is built like an automobile

Engine

and unlike other small low-priced engines is

Fully Guaranteed

by the manufacturers. In order to do that they must and do build this engine with the same care as any of the well-known Z-S Engines, from 2 to 30 Horse Power. The **Puritan** is always on the job, it does two men's work with a boy's help—for 10 cents.

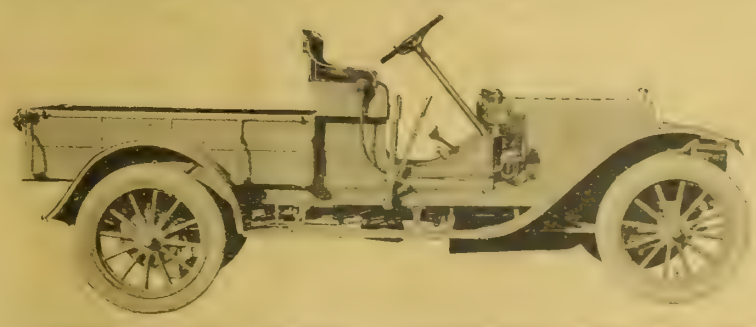
NOTE—

The **Puritan** is aircooled—no water to bother with.
The **Puritan** is a four-cycle engine—that's the kind to get.
The **Puritan** runs in an oil bath—can't run dry.
The **Puritan** is a belt driver—no gears to break.
The **Puritan** can be used for any purpose requiring 1 H. P.

Write Us for **8 Complete Pumping Outfits** shipped with the **Puritan** ready to run. **One** will suit you. **Sole Agents:**

California Hydraulic Engineering & Supply Co., 70 Fremont St. SAN FRANCISCO

DUROCAR The Car for the Farmer



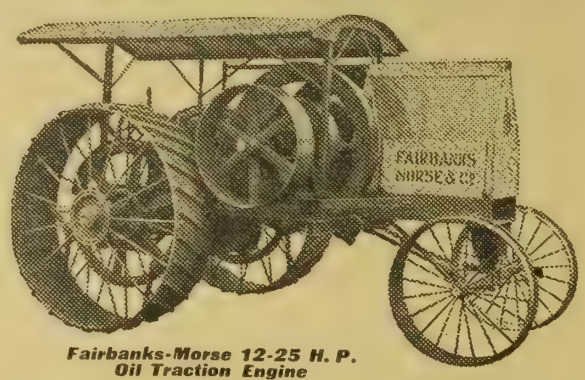
2-Cylinder, 26 H. P., $1500 **4-Cylinder, 35 H. P., $1750**

Made in Los Angeles and factory open to your inspection. Come and see us.

Both Phones **Durocar Mfg. Co.,** 935 S. Los Angeles St. Los Angeles, Cal.

If You

Want the Simplest, Most Durable and Easily Handled Traction Engine on the Market, This is It



Fairbanks-Morse 12-25 H. P. Oil Traction Engine

Write For Catalogue LA 37

The drawbar pull of this engine is equal to 12 horses. When used as a belted engine, 25 H. P. can be developed. It is well adapted to Threshing and Hay Baling.

We Are Absolute Headquarters for

Gasoline Engines ***Hand and Power Sprayers***
Hand, Windmill and Cistern Pumps
Irrigation Machinery of Every Nature

FAIRBANKS-MORSE & CO.

425 East Third Street, Los Angeles, Cal.

Our 30-60 Horse Power Oil Traction Engine will be ready for delivery October 1.

Manufacturers Of The Famous
FAIRBANKS STANDARD SCALES

Our 2-cylinder, 4-cycle Engine will operate on 3-cent distillate, as good as with the best gasoline.

Government Land

SCRIP

Will Locate Any Land

open for entry under any of the land laws of the United States for taking agricultural lands.

Absolute Title Secured

without Residence, Cultivation or Irrigation

Title guaranteed or money refunded. We have scrip that will take

Government Lands in California

Title to Unsurveyed Lands cannot be procured in any other way than by the use of scrip.

Call or Write for Booklet Which Fully Describes Scrip

Fenn S. Hildreth Scrip Co.

315 Trust and Savings Building, Sixth and Spring Sts., Los Angeles, California
210 Phoenix National Bank, Phoenix, Arizona

When writing advertisers, mention Cultivator.

Deciduous Fruit Culture

APPLE CROP INJURED.

A dispatch from Rochester, N. Y., in the Providence News, says:

"Despite the fact that the drouth in Western New York was effectually broken this week by heavy rains, prospects for apples have changed materially for the worse since blossoming time. The long, dry spell of June, followed by the withering heat of early July, did a great deal of damage. Apples have dropped heavily, it is asserted, and the present outlook is for a much smaller crop than the heavy bloom indicated. Baldwins promise to be short. In some orchards which last year had a full yield there is nothing now in the way of fruit. In other Baldwin orchards, where the crop was light last fall, there is a fair show of fruit. It is not believed Baldwins will be more than half a normal crop, while some say it will not be as large as that. That Greenings, Kings and Twenty-Ounce will be fairly good crops is the general opinion. Spys also give satisfactory promise in most localites. All these varieties have dropped quite extensively the past few weeks, but the trees were quite heavily laden, and the apples on the trees will be better for the loss.

"A News representative interviewed a number of up-state orchardists the past week. Park A. Davis, one of Orleans County's best known fruit growers, stated that after investigating conditions around Medina he came to the conclusion that apples are uneven and do not promise a good crop. This applies particularly to Baldwins. 'In my opinion there will not be more than 10 per cent of a crop of Baldwins in this section,' Mr. Davis stated. 'I would estimate the apple crop here at not over 25 or 30 per cent. Some of the orchards show a crop, but in the main only individual trees on Fruit avenue have had what might be called a good showing. Greenings promise much better than Baldwins. Twenty-Ounce, Spy and other fall varieties ought to be a fairly good crop.' Fruit avenue, which Mr. Davis alludes to in his interview, is unquestionably the biggest fruit street in Western New York. It has more than two miles of solid orchards on both sides of the road, with but three small breaks the entire length. It is at Medina."

THINNING APPLES.

There are several reasons for thinning, the following being the principal ones: First, maintaining the vigor of the trees; second, securing annual crops instead of alternate; third, to be able to produce fruit of maximum size, color and quality.

For thinning purposes, apples may be divided into two classes, viz.:

Those such as the Winesap and Missouri Pippin, which when the tree is loaded do not attain sufficient size for the better grade of pack; and those like the Ben Davis type, which generally attain sufficient size, but often so weaken the vitality of the tree as to cause it to become a "shy bearer" the next year. With proper pruning and tainning these difficulties can be overcome to a large extent. We believe that props have no place in the orchard and are only a sign of very poor orchard management.

Study each tree individually, and thin so that at picking time the tree will hold up well under a load of uniform, good sized and well colored apples. Apples of the Winesap type should be thinned to a distance of from nine to ten inches. Fruit of a larger growing type could be left a little closer.

In thinning, take off all terminal apples on long, slender branches, and break all doubles. Take off all wormy apples and all those that are much smaller than the average. Take off all limb bruised or badly frost marked apples, and also those that are likely to become limb bruised as they grow in size. Leave the apples in singles and in such a position that they can have the best chance to grow in size, color and uniformity, and be as free as possible from blemish.—R. S. Herrick, Field Horticulturist, Colorado Agricultural College.

WHY AND WHEREFORE IN SOIL FERTILITY.

(Continued from Page 99.)

ting humus into the soil and making it like a sponge to hold it. A dust mulch will do this.

Maintaining Mulch.

Cultivate frequently and keep the dust mulch fine and break up the capillary tubes by which water is constantly being brought up from the bottom and evaporated away. Even though you have no rain to fall on that mulch and compact it, the pressing down of the soil on itself will form tubes unless it is broken up every week or ten days. If this is done and the surface kept like flour, no capillary tubes are established and we save much water.

The capillary rise of water is responsible for a certain amount of our water supply, but as a matter of fact we don't get much capillary water to our crops. The physicist knows that liquids travel up small capillary tubes, but there is another force that exerts an influence on this water, and that is gravitation which tends to drag it down. These forces work against each other and we get an equilibrium at a certain point depending upon the fineness of the tube, in soil, to the fineness of the particles. We know that this surface tension is not so great a force as gravitation and only to a certain point can it carry water. As a matter of fact our best alluvial soils, made up of fine particles, friable and easy to work, are the best carriers of capillary water to greatest distances in least time. For example, Imperial soils will carry water five feet in a period of about a month. This gives an idea of how small is the lifting force of capillary water.

Capillarity is important in another way, namely in power to carry water laterally in irrigation, to spread water laterally rapidly in considerable quantities. In the lighter soils this gives a quicker supply of water to the tree; in the heavier soils it is naturally slower. There are many things you can read on this point; there are many you can observe in your own fields and in your own grove. Look up Bulletin 10 of the Bureau of Soils by Lyman J. Briggs which gives laws and reasons for the importance of capillarity as a distributor of water, not a lifting agent.

Nitrate of Soda.

Dr. King says, as Hilgard has shown many years ago, if we apply nitrate of

soda, the nitrate is used up—that is what we apply it for—but the soda remains behind. In case of soils well supplied with lime carbonate or where we put under cover crops, the balance of that soda from the nitrate of soda forms a sodium carbonate, black alkali, which is a dangerous material, if it accumulates in sufficient quantities, plants will be hurt. But if the sodium nitrate is used only in small amounts, the small amount of sodium which is left will take years to accumulate in sufficient quantities to be harmful. While there is a constant loss of other materials by percolation there will also be a loss of sodium by the same means, so we cannot say that all the sodium remains behind in the upper layer of soil.

I know that for a dozen or more years some people have been applying enormous quantities of nitrate of soda in fairly heavy soils without bad results. In the Citrus Experiment Station at Riverside Prof. Norton has applied 25 pounds to the tree for four years without injury. One man has used 40 pounds to the tree. The common practice is to apply eight pounds to the tree. This is four times as much as I would recommend even on old trees.

At certain seasons of the year the soil is too cold and that is the time to use nitrate of soda, early in the spring. After all, nitrate of soda is a stimulant and produces more leaves and twigs than fruit and we should use only a small amount as a supplement to green manuring. Put on your nitrate of soda in two applications, one or one and a half pounds to the tree, don't go beyond three pounds to the tree during the season. If you want something to act quickly, use dried blood. In a cold spring like the past one you could not depend upon dried blood. I would put on a small amount of nitrate. The action of nitrate of potash is the same as that of nitrate of soda, but as it is much more expensive, it is not likely to be considered commercially for this use.

Local Experiment Stations.

Establish local experiment stations on your own place. We must know more about fertilizing and more about every citrus tree, for every tree of a certain kind differs individually from every other. We must know its requirements in water and fertilizer. We must make use of the observations which have been made for years by men who have made a study of the subject in order to avail ourselves of the best in citrus, but the fullest knowledge comes from individual observation of experiments under your own conditions, with a mind in a receptive condition which is able to interpret results and tell what they mean in practice.

Notes.

Don't try to have a summer cover crop unless you are sure you have an abundance of water to maintain your trees and your cover crop. Try it out first on one block in your orchard.

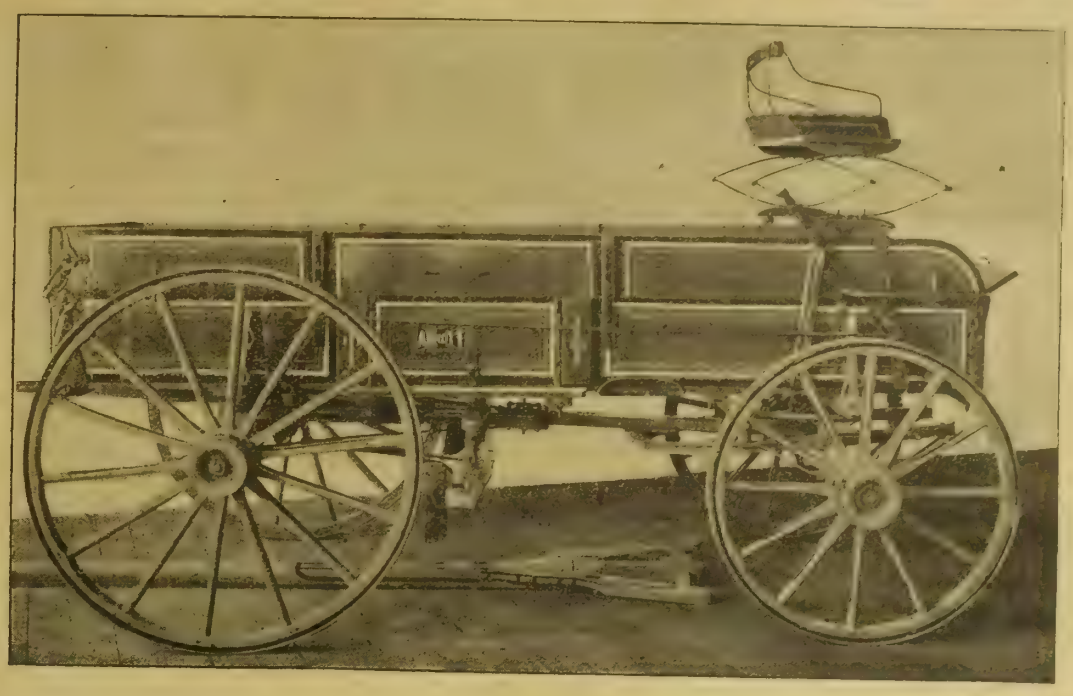
I would prefer to use dried blood in the spring and barnyard manure in the fall.

The nitrogen in a good grade of tankage is available earlier than that in blood.

Excessive cultivation tends to decrease the amount of humus, yet we must keep two or three inches of mulch.

Would prefer to fine ground bone, phosphate rock—untreated rock is cheapest—if you have a good green manuring crop. Plenty of humus means plenty of carbon dioxide, a weak acid in water, which dissolves the rock. There is no danger of using too much untreated rock.

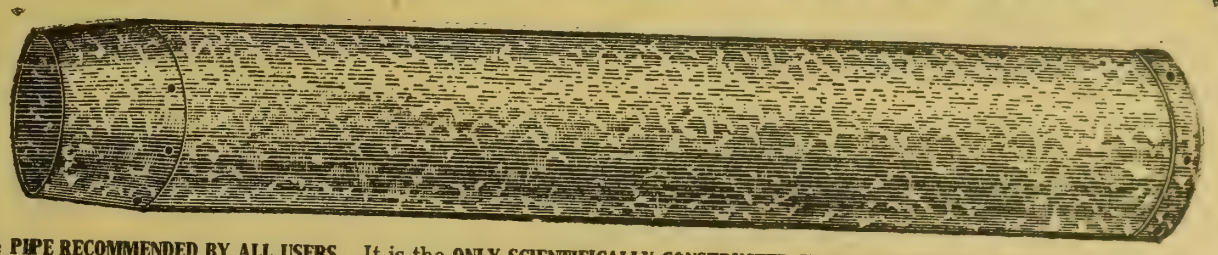
The Arnott Wagon



Honest Workmanship, Selected Material and Good Finish.
Made Especially for Arnott & Company under the Most Rigid Inspection.
Not a ***Cheap*** Wagon, but sold at a Moderate Price.
All Sizes for One or Two Horses.
Sold by the Best Dealers or Direct.

Arnott & Co. 112-118 So. Los Angeles St. Los Angeles
Established 1892

SAVE YOUR TIME WATER and GRADING BY IRRIGATING WITH AMERICAN SURFACE IRRIGATION PIPE



The **PIPE RECOMMENDED BY ALL USERS.** It is the **ONLY SCIENTIFICALLY CONSTRUCTED SURFACE IRRIGATION PIPE** on the market. **THERE'S NO ROUND SEAMS TO LEAK,** retard the flow of water or weaken the pipe. This pipe is easily handled and cheaper than flumes. It will last a life-time. For irrigating alfalfa it is the only pipe to use. We make **RIVETED PIPE AND TANKS.** Write for Illustrated Catalogue, also **SPECIAL IRRIGATION FOLDER** which may mean much to you.
American Steel Pipe & Tank Co., General Offices 342-43 Pacific Electric Bldg., **Los Angeles, Calif.**

WATER PIPE

Merchant Pipe for Steam, Gas, Water

10,000 feet	¼-inch	Standard, at	1c per foot
10,000 feet	⅜-inch	Standard, at	1c per foot
25,000 feet	½-inch	Standard, at	2c per foot
20,000 feet	¾-inch	Standard, at	3c per foot
36,000 feet	1-inch	Standard, at	4c per foot
20,000 feet	1¼-inch	Standard, at	5c per foot
30,000 feet	1½-inch	Standard, at	6c per foot
50,000 feet	2-inch	Standard, at	8½c per foot
10,000 feet	2½-inch	Standard, at	14c per foot
15,600 feet	3-inch	Standard, at	17c per foot
15,000 feet	3½-inch	Standard, at	19c per foot
20,000 feet	4-inch	Standard, at	24c per foot
30,000 feet	5-inch	Standard, at	40c per foot
20,000 feet	6-inch	Standard, at	45c per foot

Oil Well Casings

1,000 feet	10-inch	Diamond B. X. 40-lb. Special Casing, good as new	$1.00 per foot
1,000 feet	11⅝-inch	Casing, at	$1.00 per foot
1,000 feet	9⅝-inch	Casing, at	75c per foot
2,000 feet	7⅝-inch	Casing, at	45c per foot
0,000 feet	5⅝-inch	Casing, at	32c per foot
30,000 feet	4-inch	Casing, at	19c per foot
30,000 feet	3½-inch	Casing, at	16c per foot
20,000 feet	3¼-inch	Casing, at	15c per foot
25,000 feet	3-inch	Casing, at	14c per foot
50,000 feet	2-inch	Casing, at	6½c per foot

WATER PIPE—Riveted Dipped Pipe

10,000 feet 24-inch Riveted Pipe, dipped, good as new	80c
10,000 feet 12-inch Riveted Pipe, dipped, good as new, 10-guage	35c
20,000 feet 10-inch Riveted Pipe, dipped, good as new, 12-guage	35c
10,000 feet 8-inch Riveted Pipe, dipped, good as new, 16-guage	25c
10,000 feet 6-inch Riveted Pipe, dipped, good as new, 16-guage	20c
10,000 feet 4-inch Riveted Pipe, dipped, good as new, 16-guage	10c
20,000 feet of 14, 12, 10, 8, 6, 4-inch damaged Riveted Pipe, used for drain and culvert pipes for under streets, at reduced prices.	

Telephone and Telegraph Poles

20,000 feet 3, 3½, 4-inch Pipe, cut to 16, 18 or 20-foot joints, for telephone poles, fitted up with cross-arms for that purpose.

We are offering special prices to save handling this pipe. We will fill your order on any amount or size of pipe. Small orders will secure the same attention as large ones. We carry a full line of pipe fittings at reduced prices. Mail orders promptly filled. Check or money orders received. Call and examine this pipe at our plant.

PHONE OR WRITE FOR PRICES
Take Santa Fe Ave. or Huntington Park car at 7th and Broadway. Get off at Bay St.

ADAMS PIPE WORKS, 2025 Bay St., F 1917 Broadway 1274 Los Angeles, Cal

When writing to advertisers please say that you saw their advertisement in the Cultivator

Milk Coolers

See Our

Weber Cone Coolers

Sanitary and Durable, complete with 12-Quart Tank, $4.50

Will cool 30 gallons of milk per hour to within three degrees of temperature of water.

Cream Coolers $2.50 Each

Weber Copper Tubular Coolers from $18.00 up

We manufacture all our own Coolers and can supply Coolers and Aerators any capacity from one cow to 20,000 pounds per hour.

Sunset Br'y. 5006 **O. J. WEBER CO.** Home F 3657

Manufacturers and Importers of

Machinery and Appliances for Dairy and Creamery

225-227-229 East 6th St. Los Angeles, California

This Pump

Will Interest the Irrigator

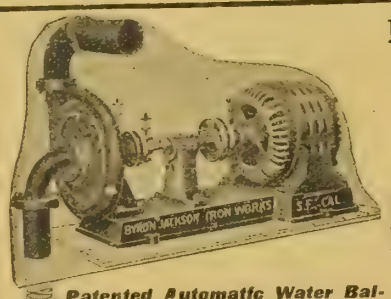
Pump has Water Sealed Gland, Enclosed Balanced Impellor. Will not cut out by sand. Can be placed in a smaller pit than any other pump. Our Bulletin, C12, tells all about it. The pump can be seen in operation at our places of business. We have a permanent branch house at

206 No. Los Angeles St., Los Angeles

Krogh New Type Vertical Water Balanced Pump

Krogh Mfg. Co.

149 Beale St. San Francisco, Cal.



HARD TO BEAT

Electrically driven centrifugal pumps are used extensively for irrigation work. We furnish these pumps from one horse power up. We make pumps for special conditions.

Write for booklet—It tells you how.

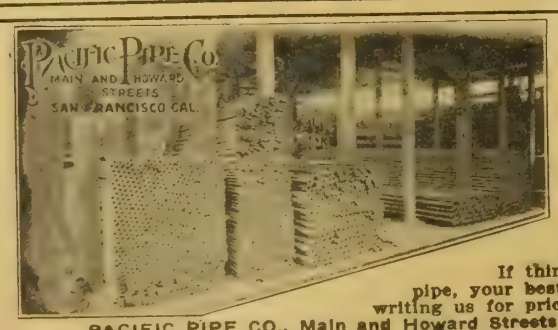
Byron Jackson Iron Works, Inc.

357-361 Market, St., San Francisco

Patented Automatic Water Balance Irrigation Pump, direct connected to electrical motor, self operating, ideal, will require no attention.

212 N. Los Angeles St. LOS ANGELES

WORKS Carlton Station West Berkeley, Cal.



Save Money By Buying This Good Second-Hand Pipe

We can supply you with any size and quantity of Standard Pipe or Casing—all new threads and couplings—all stock guaranteed first-class.

If thinking of buying any kind of pipe, your best interests will be served by writing us for prices and particulars.

PACIFIC PIPE CO., Main and Howard Streets, SAN FRANCISCO.

When writing advertisers, mention Cultivator.

Live Stock and Dairy

Dairymen and stockmen are requested to write of their experience. Mrs. Sherman is always willing to answer queries and this, with experience of other workers, will make this department of greater value.

VALUES.

By Mrs. M. E. Sherman.

On all sides we are confronting increased prices in producing our crops, but no increase in returns. Wages are higher and everything the farmer uses, yet the people in the cities are full of the idea that if they can only get a piece of land that they can make a living from the start. It seems to me that the price of farm lands is being unduly inflated in consequence of this unreasonable demand. Take dairying alone in California, it would seem when the month of June gave a receipt of 2,036,600 pounds against 1,330,900 for June of 1910, or a gain of fifty per cent, that the creamery business was growing very rapidly. The prices of California butter were sustained in a measure by the market of the Northwest taking the surplus. This is the first time butter has gone out in a large amount for some years. Why?

The increase in the number of herds has not been as great as the increased production of the herds by careful selection. The use of pure bred sires within the past ten years is now showing up in the third generation, also the use by so many of the Babcock tester has resulted in the weeding out of the poorer producers. The many herds that a few years ago hardly averaged two hundred pounds of butter per cow are now reaching out to the four hundred mark. Many are far past the three hundred mark at present. The increased profits are not all used up as yet in increased costs. The first one hundred and seventy-five pounds the cow gives of butter is all taken to pay the costs, leaving only twenty-five pounds for profits. This profit may be non-existing for the cow that is not on the alfalfa field, but it will be recognized that even then it requires careful handling in keeping down expenses to make this amount. When the cow produces four hundred pounds of butter that gives two hundred and twenty-five pounds to be added to the profit side, then the dairyman buys an automobile to get the cream more quickly to the creamery.

Value.

The prices of cattle from established breeds of dairy animals have been very greatly increased. Indeed, so far, no year on record has the price run so high for pure bred stock as in the year 1911. In the Jerseys, the bull Jollys Royal Sultan brought at auction $10,000, while Noble of Oakland went for $15,000. The Jersey cow Majestys Lady Houpla sold for $3,425. A Holstein bull calf sold for $10,000. The sale of Ayrshires at Maxville, Ontario, made some record prices for that breed, forty-two cows selling for an average price of $407.50 each, while the bull Bargenock Victor Hugo brought $2,600.

Feeding.

After using a silo, lo these many years, for the first cutting of alfalfa, this season four more silos have been built near Fresno for the same purpose. The necessity has come, now, that the herd have been tested for butterfat of improving the feeding conditions. In the alfalfa regions of the state nothing can be grown that equals alfalfa in cheapness of production or that fed to the cows will produce as much milk. In Del Norte county, kale is being grown for the same reason, that of furnishing succulent food in the winter time. A Mr. Scarina reports having 45,000 kale plants for this winter's feeding. One plant with a small amount of hay makes a day's ration for a cow. The value of water to the cow's milk production is very great. The old way of salting her food to make her drink freely of water has given away to the wiser plan of feeding the water in the form of green foods. A cow that will milk ten thousand pounds of milk in a year will require eight or nine thousand pounds of water to carry the fats and other solids of the milk.

Tuberculosis.

The campaign against tuberculosis in cows has nearly arrived in California. The county boards of health are taking it up in earnest, and while mistakes in application may be made that will wrong some dairymen grievously, still it is right and in the end will benefit every one. It will increase greatly the value of tested cows, for until this time the fact that a cow had passed the test did not enhance her value in selling. If the city and town people had really wanted milk from tested cows badly enough to pay for it they could have had it long ago. The public must be educated to demand it and then it will not mind the cost. The increased cost to the dairyman will not increase his profits, as he will have to pay the money out at once for other things. The milker at forty and forty-five a month will not furnish his own white suits nor pay the laundry. It costs fifteen dollars a month to keep each man in white for the laundry work alone. Then for every sixty cows in milking, a man to groom them, clean stable and do general cleaning every day, while twice a month two extra men will have to be employed for whitewashing and other extra work around corrals. The city people need to be educated to the necessity of using the certified milk and then we will gladly furnish it at a price to cover the extra expense of tuberculin testing, and the interest on the money invested in cows that are condemned. In the past the trouble has so often been that the producer has been squeezed whenever any extra cost has been added. The publicity campaign on the use of certified milk will have the effect of putting the cost on the consumer.

DIP OR SPRAY FOR CATTLE.

By John M. Scott.

Every farmer, whether he owns one animal or one hundred, ought to be interested enough to protect his animals from the injurious effects of parasites. We have been using at the Experiment Station for the past year a dip which has proved quite satisfactory. The formula was prescribed by Dr. Nelson S. Mayo, and is as follows:

White arsenic, two-fifths pound; sodium carbonate, (crystals), one and

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Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 225-227-229-231 East Sixth Street, Los Angeles.

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IMPLEMENTS—Covered milk wagon, open milk wagon, both first class; 2 good farm wagons, cart, 2 sets heavy work harness, 2 sets single driving harness, 1000 bottles, crates, new cream separator, aerator, cans, stanchions for 31 cows, buggy, dairy house, steam engine, old lumber, pipes, household goods, etc., etc.

Terms, Cows—Half cash, balance six months' time with note and approved security and 8 per cent interest. 5 per cent discount for cash on time sums. Horses sell for cash.

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one-eighth pound; yellow soap, one and one-eighth pound; pine tar, one-half pint. Dissolve the arsenic by boiling it for half an hour in one gallon of water. Add the dissolved arsenic to five gallons of water. Shave the soap, mix it with the soda, and dissolve the mixture in one gallon of water. When dissolved pour in the tar, pouring in slowly in a fine stream, and stirring meanwhile so as to get it in solution. Then mix it with the arsenic solution, and add water to make twenty-five gallons in all.

This is to be used as a dip, spray or wash. It loses but little by age. The solution not only kills ticks, but also kills all other animal parasites with which it comes in contact. It may be applied either with a brush or a sprayer, or it may be put on in a dipping-tank through which the animal is passed.

Injury by Ticks.

One of the worst parasites with which we have to deal is the cattle tick, which causes Texas, or splenic fever. The loss among native stock from this disease is quite heavy; but perhaps most of the loss is caused not by the fever, but by the heavy drain upon the animal's system from the large quantity of blood taken by the ticks. One tick consumes only a small quantity; but the continued feeding of several thousand ticks upon one animal soon exhausts its constitution and vitality. This is especially true of young animals, such as calves from six weeks to one year old—a period when they ought to be making their best development and growth. If at this time they are feeding several thousand ticks, instead of growing and developing as they should they will actually become smaller. The young animal once stunted in growth will never develop as it would have done, if it had received proper care and treatment from the first. Besides suffering this loss of blood, tick-infested cattle suffer continuously from irritation and injury of the skin. The tick when attaching itself to the animal's body puctures the skin. The puncture is soon surrounded by an area of intense inflammation, which results in the formation of readily visible scabs.

Loss of Milk.

The injury to the live stock owner by the ticks is not confined to the loss of blood, and the irritation of the skin caused to his cattle. It has been estimated that the loss to the dairyman caused by the cows being heavily infested with ticks is equal to one quart of milk a day for each cow. This loss amounts in a year to no less than 275—300 (70 to 75 gallons) of milk for each cow. This means a yearly loss of $20—$25.

Much the same is true of cows on the range when nursing calves. The cow has to feed the ticks. Hence, if the ticks abstract the equivalent of one quart of milk a day from dairy cattle, doubtless they reduce in some similar proportion the milk yield of the range cow, whose calf must lose that amount, and the calf likewise suffers a corresponding drain from its own ticks. How then can we expect our cattle in tick-infested sections to develop as they ought to develop?

Eradication of Ticks.

Of course the best solution of the problem is the eradication of the ticks, and this could be accomplished if every live stock owner would co-operate with other live stock men.—Florida Agriculturist.

Do your cows milk hard? Send 50 cents for teat expander. O. J. Weber Co., 225-227-229-231 East Sixth St., Los Angeles, Cal.

USE OF THE CURRYCOMB.

Proper grooming, feeding and driving is all a horse needs to make him the noblest animal on earth; therefore be generous in the use of the comb and brush, especially the brush. In using a currycomb, see that the teeth are not bent. Such a comb is an instrument of torture. Teach the boys to use it gently, as many horses are given ugly tempers by cruel and careless currying. To hurt a horse will cause him to hate the operation and the operator.—Horse World.

High-priced land, high-priced labor and high-priced feeds are making it mighty hard for the dairyman who has to rely on low producing cows. The average American cow is said to produce about 150 pounds of butter a year, a five-dollar calf and a few dollars worth of skimmilk. Even at 30 cents a pound for butter you cannot figure her annual gross income over sixty dollars a year. Feeding such a cow ten-dollar hay, thirty-dollar bran and scurrying all over the country to find men who will engage to milk cows is not an encouraging business and no wonder so many people quit dairying.—Coleman's Rural.

Read and think. Observe your own and neighbors' cows; put into practice all the good things learned from the reading and from observation. There is no danger of keeping things too clean.

Veterinary

Answers in this column by Fred G. Matthews, M. S., D. V. M., 1232 Central Ave., Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Sidebone.

A young horse has a hard painless lump on one side of his foot just above the hoof. The horse is not lame. Ringbone feared. Kindly advise treatment.—Subscriber, Whittier.

This is probably a sidebone. Sidebones which do not occasion lameness require no treatment except careful attention to shoeing.—F. G. M.

Lameness.

My horse is lame part of the time from a sore which started at the frog and has now extended to the front and upper part of the foot. A watery substance oozes from the foot and occasionally a heavy white matter flows.—Subscriber, Covina.

Your description does not explain whether the horny wall is separating from the flesh, but I presume this to be the condition. This being correct, have your horseshoer cut through the sole directly below the point where white matter appeared and if water is encountered enlarge the opening and inject hydrogen peroxide once daily.—F. G. M.

Swelling on the Jaw.

A young milk cow, due to calve in six weeks, has recently developed a hard, painless swelling extending almost the entire length of the jaw. She coughs occasionally. Should we separate her from the other cows or use the milk?—Subscriber, Beaumont.

Lump jaw is suspected in this case. Dissolve two ounces of iodide of potash in a pint of water and give two tablespoonfuls or one ounce of the solution twice daily in the feed. Skip a week and repeat. I hesitate to advise the use of milk from afflicted cows unless I am certain the disease is benign. There is little danger to other cattle while there is no discharge.—F. G. M.

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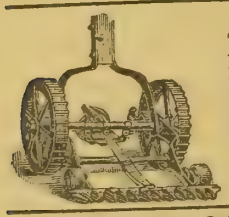

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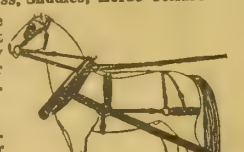

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Small Fruits and Vegetables

THIS MONTH.

This month offers the least inducement to garden work of any on the calendar. Excepting under most favorable conditions, the heat will prove too much for seeding of any except hardy plants. Of course an abundance of moisture down deep in the soil will aid materially with all plants. Succession of lettuce radishes and similar hardy plants, if covered when planted so as to give the seed a chance to send the young sprouts through the soil, will make succulent growth which affords a most acceptable addition to the midsummer table. Peas, onions, celery, cabbage and cauliflower may all be planted. The first sowing of tomatoes for the winter crop may be made this month, planted in flats or in protected seed beds. This is the month for the planting of the second or fall crop of potatoes. For this only irrigated land is possible. Prepare the soil by deepest and most thorough of irrigation and plow deeply and put in thorough tilth.

Blackberries, raspberries and loganberries may all be given their summer pruning. Blackberries and raspberries should have all canes removed which have borne the last crop. This gives more room for the young shoots which are coming for the next crop. If these are growing too lustily pinch back to force branching and consequent greater fruitfulness.

GIVE PLENTY OF DISTANCE.

Many gardeners make the mistake of crowding garden vegetalbes too close in the drill. Vegetables require rapid growth and quick maturity to give quality and flavor to the plants when served. Unless the soil is exceptionally rich and there is plenty of soil moisture available during the growing season, the plants are apt to be dwarfed and the quality of the vegetables impaired.

In producing vegetables for the market, the grower will endeavor to grow plants of high quality and desirable flavor, and he cannot afford to take any risk. It is far better to produce fewer products and gather vegetables of better quality than to have an abundance that do not command fair prices.

The safest plan is to sow plenty of seeds in order that a good stand may be secured. If the plants are tender and the spring is favorable for the insects, diseases, cold nights, etc., leave about twice as many plants as you desire to grow. When the weather is favorable for the growth of the plants, thin promptly, leaving the required number of plants. Be sure that the plants have sufficient distance to produce vegetables of extra quality.

CUCUMBER AND THE SQUASH BUG

It angers the gardener often beyond endurance to nurse up a bed of cucumber and squash seeds and then see the squash bugs and cucumber bugs swoop down in armies and clean up the whole patch. When you battle with a cucumber or squash bug you've got a tough customer and one that can put up a stiff fight. There are those who tell us to sprinkle our vines with cayenne pepper and watch for results. The impression here given is that the bugs get a whiff and cough and sneeze themselves to death. The average gardener wouldn't care about that if it was a means of getting rid of the pest.

SETTING STRAWBERRIES IN THE FALL.

By Q. A. Lobingier.

Whether it is wise to attempt it depends upon several things. If you have your ground in fine shape and plenty of water at command and under control so that you can use it in large or small quantity, and extra well-rooted plants, and the weather is not too hot, you may succeed fairly well. If one only has a few plants to set out it can be safely done by removing each plant with a ball of earth; and while this is a slow, tedious process it is a pretty safe one, if followed by immediate watering. But in setting out in large areas, with all my experience I would not think of attempting it unless I had plants that had been layered in pots.

It is not possible to have the strawberry plants in a dormant condition before January and I know of no plant more difficult to transplant into the open field during such hot weather as we are likely to have throughout the fall, if it cannot be done without disturbing the roots. I have been uniformly successful with plants from pots, and if set as early as August 20th and well cared for until the holidays, you can expect a fine crop of fruit the following spring. Set even as late as November 1st they will grow more or less throughout the winter and a partial crop can be expected the following spring. While this growth will not manifest itself in the foliage it will in the root development. I always plant on a level surface and mark out the rows 20 inches apart, and set the plants 12 inches apart in the row. I have found the method to be of more advantage in picking and irrigating than any other—and I have experimented with about all of them. As to variety, almost every locality has its favorite. For Southern California the Brandywine is the leading variety and has been for the past ten years. Recently the Klondike has been largely grown and is an earlier berry of great excellence, but does not bear for as long a time during the season. The strawberry is not a tropical plant and newcomers or beginners will need to go a little slow in engaging in strawberry work on a commercial scale in the interior hot valleys. A little investigation will demonstrate that you will not find the business flourishing very far back from the Coast. This is not to say that it is not possible to have strawberries in many of the interior valleys, but the risks from heat are so great as to make commercial success very uncertain.

TOMATO BLIGHT.

When I noticed my tomato plants beginning to blight this season I tried the experiment of taking equal parts of lime, wood ashes and sulphur, sprinkling it on top of the ground and over the plants, and put small piles of manure in the ditches so the water would seep through them. This mixture was put on two or three times during the season, very few of my plants died and I have fine tomatoes now.—Mrs. A. J. Jordan, Reedley.

The honey flow of Kings County is reported materially later than usual, but output larger than anticipated.

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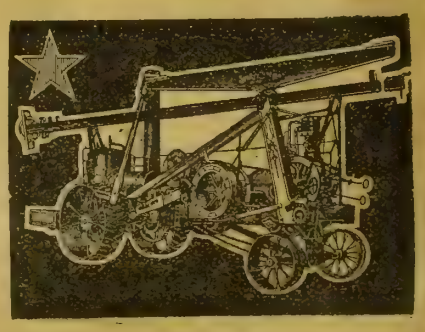

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The Ornamental Garden

THIS MONTH.

This is a trying month in the ornamental garden and one in which few new plants are started. The best of care must be given to those which are already established, especially thorough and deep irrigation and cultivation to all excepting the most hardy shrubs or trees. The lawn needs more water than during perhaps any other month of the year and best of care now will aid in preventing the rapid spread of Bermuda, but if the blue grass is not given sufficient water, the Bermuda will take advantage of the opportunity.

During this month sow pansies and stocks in the seed bed for pricking out later. The seed should be covered very lightly and burlap laid over the surface to prevent baking. It should be kept moist practically all the time. When seeds are up lay off the burlap, but be sure to shade the ground with lath or cloth frame a few inches above the ground. Salvia, Chinese pinks, petunias and verbenas may all be sown the same way this month.

The violet bed should be given attention, the old plants divided and new ones replanted. Golden glow and goldenrod are just coming into bloom and require to make richest flowers an abundance of moisture. Shasta daisies have about ceased blooming and may be trimmed, as the younger shoots will make fall growth if fertilized and irrigated. Gladiolus and Watsonias should be taken up this month if the bulbs have ripened, as they have in all the earlier planted bulbs.

A HINT FOR FLOWER GARDENS.

California has much to be thankful for in the line of natural advantages in flower culture, but we do not live up, or practice up, to its possibilities. A French hint noted in the London Daily Mail may be of value.

"Even more wonderful is the forcing of orange blossoms, which is conducted on a large scale in another part of Paris, Charonne. This business belongs to a family which has a secret, handed down from father to son, for producing the orange flowers at any time of year, just as they are called for. At all big weddings in Paris the hymeneal blossom still lends splendor to the bride's adornment and fills the church with its fresh, delicious scent. They come in most cases from the orange groves of Charonne! In a number of places round about Paris roses are grown under glass in winter; wallflowers, too, and violets and lily-of-the-valley. And many of them go to the south. Do they come back as "Fleurs de Nice," I wonder! I shall doubt that notice when I see it in the florists' shops in future, though the flowers will be just as dainty and desirable although they were grown close by.

"Surely here is a hint for enterprising florists. The market for spring flowers in winter is both steady and profitable. If lilac can be brought to flower in Paris through the dark months, why could it not be equally well produced near London? Why not add to "French gardening" this excellent French flower industry? Capital is required, and, still more important, scientific skill wedded to ceaseless care. But with lilac at half-a-crown a spray, the outlay and the labor would both be well rewarded. Even if we have not the genius of our quick-witted neighbors, we can surely follow where they have led. We cannot rival the natural early flowers of the Riviera, but we might do a good deal to compete with the Paris forcing houses and keep the money we spend on winter flowers in our own country instead of sending it abroad."

THE FRENCH FLOWER TRADE.

January is the desolate time in our English gardens. It is something if even the tiny golden cup of the winter aconite gladdens the brown soil; if, here and there perhaps, a fragile polyanthus, born before its time, perks up in the morning sunshine. Yet there is no season of the year when the flower shops draw our gaze with a show more rich and rare. Tall branches of lilac enchant us with their delicate beauty. The downy yellow blossom of mimosa perfumes the air. Great bunches of roses are displayed alongside of proud carnations and the virginal narcissus. Orchids and azaleas, giant cyclamens and the sturdy little button anemones, tuilps and the last glories of the chrysanthemum time, all combine to conjure our money out of our purses that our rooms may help us to forget the dun sky of winter and the bare earth outside.

It is in Paris that the flower shop especially flourishes. There are so many there that one can count upon never going many blocks without coming across one. Even on the open-air stalls one finds exquisite arrangements of quite expensive flowers. Under the shadow of the Madeline I walked yesterday between two lines of booths where hundreds of pounds' worth of roses cried aloud to be bought. This morning close to the Arc de Triomphe I bought lilac and carnations and big, sweet-scented lilies of the valley off a little street corner erection. In London one knows all the flower shops—there are so few; and the street sellers are content to appeal only to the purchaser of very modest means. One reason for this is that most of our flowers in London come from France, and are therefore dearer because they have further to travel. A certain amount of forcing for the early market is done in England, but the great bulk of the supply is sent to us from across the Channel—from the gardens which lie all along the Cote d'Azur from Hyeres to Vintimille.

The Flower Train from Nice.

Have you ever seen the flower train leaving Nice at one o'clock in the day? A long train it is, and as the spring advances it grows longer still. Every van is filled with a fragrant freight. The flowers are packed with the greatest care, and though they do not reach England till the next night, they are almost as fresh when they arrive as when they are gathered in the sunshine from the terraced gardens which look down upon the sparkling sea. Between November and May last over two thousand tons of flowers were sent to England from the Riviera by way of Marseilles and Paris. Even a pound of flowers represents a great many, so light does their delicate beauty weigh.

During the last few years Germany, becoming more prosperous and luxurious, has increased her flower purchases at a very rapid rate. Now she takes from the Riviera almost half as much again as England, whereas in 1903-4 she took only half as much, and even in 1906-7 the amounts were equal. Thus today Germany spends upon Riviera flowers nearly three times what she spent six years ago.—London Daily Mail.

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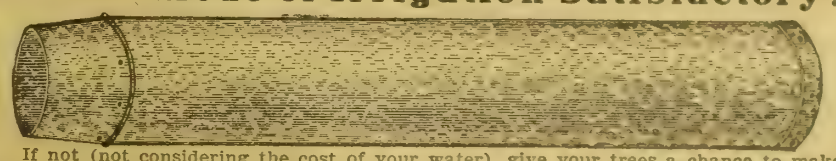

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ORIGINAL STUFF.

There is no doubt that at times the shears and the paste pot supply some remarkably good material for every farm or other kind of paper. Some of the good things in this week's Cultivator are clippings made from other well edited papers, but from a California standpoint such material which is of value is hard to get, for some of the departments at least, and in any case we believe the matter of greatest interest is that which is furnished by people of our own section who have to do with the problems which more immediately concern us.

To the end that as much as possible of this material may be had for the columns of the Cultivator, we have repeatedly drawn upon practical workers here and there over the state, and no issue of the Cultivator comes out without some of these writers being represented in our columns. Especially do we wish to refer to last week's issue, in which over twenty-five columns was read for the first time by subscribers of the Cultivator.

We hope every citrus grower in the state saw the article on withertip by Prof. Smith of the Southern California Pathological Laboratory. Prof. Smith is an investigator who does not form his conclusions hastily, and whatever he furnishes is of the very best. Mrs. Sherman again chatted with our live stock subscribers, speaking of the securing of registration for every animal entitled to it. Mr. Harry L. Murphy, of Sacramento County, spoke a good word for his favorite breed, Berkshire hogs. Prof. Shaw comes to us with two articles, one on cane and beet sugar, and the other an appeal for greater attention by Californians to the Sixth International Dry Farming Congress. Mrs. Basley's "Ducks" gives what many subscribers have desired, valuable information regarding the money maker, poultry. Questions and Answers was a material part of the issue, and from the commendations received for this department, we believe it is one of the most valuable features of the Cultivator. Some questions come to this office which are trying, in that they do not give full particulars for intelligent answer, but as a rule much intelligence is manifested in the asking of questions, and we try to secure the answers from those who are fully qualified.

All told, we do not think last week's number has been excelled in worth, excepting by some special issues. We make no promises for the future other than to assure our subscribers that every issue will be held up to the highest possible standard.

SWEATING FRUIT.

A new regulation of the pure food division of the Department of Agriculture declares that "sweated" oranges are adulterated under the provisions of the pure food act. Now, the question may not embarrass California growers very much, but the Florida growers are up in arms. Florida fruit sweetens so as to be palatable before the rind of the orange colors. This backwardness of coloring has been remedied by placing the fruit in close rooms and subjecting to moist heat for two or three days, or "sweating," to give the color acceptable to the eye. The ruling of the department will prevent this, and it is doubtful if the Eastern trade will accept the green colored fruit, for we all know that we buy fruit with the eye.

We are not informed as to whether the same ruling will obtain as to lemons or not, but as the value of a lemon is in its acid rather than its sugar, we imagine there will be no objections. True, lemons are seldom sweated. California has been guilty of sweating to a limited extent only, and we do not think the new ruling will affect the trade of this state, but strictly, as the ruling stands, it may force a settlement of the question as to what "sweating" really is. Presumably the term is applied to the process where the fruit is subjected to artificial heat and moisture for a period in a close room, but as a matter of fact nearly all are sweated before being sent to the market by simply allowing the natural "sweat" which forms after the fruit is placed in the packing house.

FARMERS INSTITUTES.

J. B. Neff, Conductor of Farmers Institutes for Southern California, announces the first institutes of the season to be held in San Diego County. The dates are: La Mesa, August 14; Lakeside, August 15; Ramona, August 16; Little Landers Colony, San Ysidro, August 17. The latter place, by the way, is near Tia Juana, on the line between California and Mexico. The "Little Landers" are believers in intensive farming and securing from a small tract of land a living for a family, instead of attempting to farm a large amount of land indifferently.

Other institutes to be held are on the following dates: Orange, August 18-19; Gardena, August 21.

WALNUT BLIGHT "CURE."

A Santa Barbara County walnut grower claims that the spraying of walnut trees with sea water is a complete remedy for walnut blight. We hope the belief of this grower will prove to be well founded, because there is little question the supply will be sufficient to effect a permanent cure of this dreaded trouble. We would not, however, advise very long shipment of sea water to use for spraying purposes.

Two other formulas are recommended by the same grower. One consists of a weak solution of bicarbonate of soda mixed at the rate of "one teaspoonful to each cup of water." In lieu of the sea water a solution of salt will answer.

The State Agricultural Experiment Station has just issued Circular 65, the California Insecticide Law, written by Prof. C. W. Woodworth. It has to do with the new insecticide law and its requirements. Further, it refers to the chemical analysis of various insecticides which will be made by the chemistry division of the State University. Everyone having to use insecticides should write for this circular. Regarding the new law Prof. Woodworth writes:

"This law, which has just gone into effect, requires all manufacturers or dealers to properly label and guarantee the purity of all such substances, provides severe penalties for its violation, and prohibits the sale of such goods until the dealer shall have complied with the requirements of the law.

"Any user of insecticides or fungicides can now have the material he buys examined by the University upon the payment of a nominal fee, and thus learn whether it conforms to the guarantee of the dealer."

Circular 66 of the University of Califorina College of Agriculture, by Prof. H. J. Quayle, while of only seven pages, has a world of information on sprays. In fact, it is almost a complete spray calendar, having twenty formulas for treating the various pests of agricultural crops.

We note that an Eastern exchange, in boosting for its state fair, says, "The state fair is the advertising agent of the state." If California had depended upon its state fair to be its advertising agent it would never have reached the position it has. President McKinley said, "Fairs and expositions are the time keepers which mark the progress of states and nations. They record the world's advancement." California's state fair may succeed in being a recorder of the state's advancement; we sincerely hope so.

The Eastern farm press is urging the farmers to plant soiling crops to make good the loss of pasturage and meadows from the intense heat and drouth. This is a case where we may call the Easterners' attention to their oft-repeated claim that they do not have to irrigate. Californians have always felt a far greater security in carrying out their slogan which is that California farmers do not have to go without irrigating.

Clover seeded this year in almost all sections has been a complete loss and reseeding is urged at once.

Referring to the fact that Florida has no laws to protect the fruit interests of that state from the entrance of pests, the Florida Fruit Grower speaks of the California horticultural law as a splendid one, and adds: "It is to that state we must look for protection against fruit pests, the fruit fly which may come into this country from Hawaii and through California ports." Fortunately, California has been alive for years to the danger, and her vigilance has protected us so far.

Mr. Powell's investigations in the fruit sections of Italy developed the fact that labor in that country is about one-fourth to one-third as expensive as in California. The cost of transportation to our markets is also about one-third the cost to our growers. It may be readily imagined what the results will be from the removal of protection on citrus fruits.

The crop Reporting Board of the Bureau of Statistics reports 115,939,000 acres of corn planted in this country this year. Compared with 1910 this is 101.7 per cent. The condition on July 1st this year was 88.1 as compared with 85.4 the same date last year. Plainly, with the drouth which followed July 1st for some time, the output will be greatly lessened.

A. V. Steubenrauch, of the Bureau of Plant Industry, has issued a leaflet on "The Relation of Handling to Decay of California Navel Oranges." It has to do only with the past season's investigations, and is material along the line of the work conducted by G. Harold Powell some years ago.

In a tree planting contest in Pennsylvania some weeks ago one horticulturist is reported to have planted and tramped in the dirt about 61 trees in ten minutes. As we say, this was some weeks ago, and we would be glad to hear with what results to the trees. We imagine there was not much fingering of dirt into the rootlets. The record by individual minutes is: first minute seven trees, second minute six trees, third minute six trees, fourth minute six trees, and so on.

The Panama-California Exposition at San Diego is planned to be run the entire year of 1915.

Agricultural News Notes of the Pacific Coast

Northern California

Vacaville is already shipping early grapes.

The first car of grapes shipped from the state sold in Chicago for $3400.

The first hops of this season were sold at Wheatland, Yuba County, last week.

Another boy's dormitory is to be constructed at the University Farm at Davis.

The flea beetle is threatening serious injury to vineyards of Yolo County.

Sacramento has voted $75,000 to improve the channel of the river below that city.

The output of almonds from Butte County will be far larger than any preceding year.

Walnut Creek, Contra Costa County, is planning for a Grape Festival to be held October 7th.

A dairyman at Woodland, Yolo County, has just added 17 registered Holsteins to his herd.

Fresh fruit growers are elated over the prices which have been obtained through the whole season.

Truckee, Nevada County, is planning for a snow carnival to be held sometime during the coming winter.

Preparations for the great Gravenstein Apple Show at Sebastopol which will open on the 14th are nearly completed.

The prize Jersey cow of California, which has been owned by the University Farm, recently choked to death on a carrot.

The Alameda Sugar Company, at Alvarado, is contemplating moving its factory to some section in the Sacramento Valley.

Irrigated beets near Willows, Glenn County, are making wonderful growth and promise is made for a most profitable season.

Grain warehouses at Butte City, Glenn County, will soon be filled with over 100,000 sacks of barley and 15,000 sacks of wheat.

Black caterpillars have been so plentiful at McCloud, Siskiyou County, that railway trains were stalled owing to "greased" tracks.

The output of tomatoes from Marysville, Yuba County, has increased until it has become one of the great factors of that section.

Wells on the Hagen Grant near the city of Sacramento, are cause for hope that the great tract is underlaid with sufficient water so that irrigation by pumping will be possible.

The Sacramento Ramie Company is to construct a factory for the handling of this textile and it is estimated that within the year 15,000 acres near Sacramento will be growing this crop.

A great concrete siphon is to be built under the tracks of the Southern Pacific at Willows, Glenn County, to conduct the water in the canal of the Sacramento Valley Irrigation Company.

The Sacramento Valley Irrigation Company has let contracts for the removal of over a million cubic yards of earth in the construction of irrigation works in Glenn and Colusa Counties.

Central California

The Santa Cruz poultry Show is declared to have been a great success.

Lodi tokay grape growers anticipate big returns from the coming season's output.

Poison spread for squirrels is causing death of many droves in San Benito County.

Tulare County peach growers have been offered ten cents per pound for first grade dried peaches.

A drainage canal is to be constructed near Kerman to carry storm water into the San Joaquin River.

A. C. Pears, of Tulare, and Dick Lipscomb, of Visalia, are appointed Tulare County dairy inspectors.

Reedley, Fresno County, reports its fruit crop as exceptionally good quality and commanding best of prices.

Combined harvesters once common in the section of Exeter, Tulare County, are now scarcely ever seen.

Meetings are being held at Fresno to consider the organization of the raisin growers under the Nutting plan.

Commissioner Sharp of Kings County is inspecting all shipments of Utah alfalfa seed, looking for alfalfa weevil.

Fresno has 10,000 tons of ice stored for fruit refrigeration. The first special fruit train service started last week.

Squirrel Inspector Howard of Kings County thinks there is an opening for contractors to rid lands of the squirrel pest.

The first full car of fruit ever shipped from Kerman, Fresno County, to the eastern markets was forwarded last week.

Watermelon growers at Dinuba, Tulare County, are fearing material loss because of attack of blight in many of the fields.

The Pajaro Valley Poultry Association is planning for an exhibition October 11-14. This is during the Apple Annual week.

Tulare County board of supervisors has passed an ordinance prohibiting the shipping into the county of any diseased cattle.

The newly organized Pajaro Valley Poultry Association celebrated its birth by a chicken banquet at which 200 were present.

Owing to extensive planting of alfalfa at McFarland, Kern County, plans are being made for the starting of an alfalfa meal mill.

Santa Cruz County treasury being short of funds, Horticultural Commissioner Volck has agreed to waive his salary for the month of June.

Small wine grape growers of western Fresno County, controlling something over 400 acres, will pool their interests and sell to one purchaser.

The Valley Grain and Warehouse Company operating warehouses at Orris, Ducor, Terra Bella and Lois, Tulare County, estimates for those sections 180,000 sacks of grain.

Santa Clara Valley is planning an exhibit at the 1915 Exposition which shall consist of a miniature trolley line carrying passengers through canvas depicted scenery showing the orchards and gardens of the entire valley.

Southern California

The Oxnard sugar factory began its beet slicing July 27th.

The Long Beach Poultry Association is making plans for its next poultry show.

A Ventura County bean farmer has patented a machine to bunch or pile the bean vines.

About 40 per cent of the grape crop of the Escondido Valley is sold in the city of Los Angeles.

There will be a heavy planting of apple trees in the Yucaipa Valley, San Bernardino County.

The West Ontario Citrus Association has been formed at Maerod, between Ontario and Pomona.

Escondido has appointed her Grape Day directors and a great celebration is planned for September 9th.

Los Angeles, now the richest county west of Chicago, has an aspiration to be the richest county in the world.

Butterfat prices, which have stood at 22½ cents in the Imperial Valley, were advanced last week to 24 cents.

Experts are advising Imperial Valley farmers not to plant walnuts owing to the extreme aridity of the section.

The Chino Ranch farmers in San Bernardino County will receive about $150,000 for their sugar beet output this season.

The big cotton seed oil mill at El Centro has made preliminary runs and is now practically ready for the season's run.

The temporary officers of the new Imperial Irrigation District are: Fritz Kloke of Calexico, chairman; Earl C. Pound, secretary.

The Chino sugar factory will have a beet pulp drying department completed in time for the handling of the pulp for this season.

The Anaheim Union Water Company has been formed by the union of the old Anaheim Company, the North Anaheim Company, the El Cajon Company and the Farmers Ditch Company.

One of the most disastrous forest fires in the history of Southern California burned for over a week in the Sierra Madre mountains north of San Bernardino and west as far as the mouth of San Antonio canyon.

Agents of a colony of Mormons have been investigating lands in the valley of the Cuyama River, and it is expected that storage reservoirs and development of other irrigation possibilities will make this one of the garden spots of Santa Barbara County.

A petition is being circulated in the neighborhood of Brawley for continuance of distribution of lady birds by the state horticultural commission. These beneficial insects are gathered every year in the Sierra Nevada east of Sacramento and placed in the Imperial melon fields.

Efforts are being made to construct a new ocean boulevard along Ventura and Santa Barbara Counties' ocean front. It is stated that this will straighten the lines of the highway so as to save nine miles in the distance from Ventura to Carpinteria. The plan will give over 30 miles of ocean boulevard.

The Coast

Helix, Oregon, reports magnificent growth of spring wheat.

North Yakima peach growers are selling their crop at about 60 cents per box.

The jute mill at the Washington penitentiary is turning out 7000 grain sacks daily.

Plans are being made for an agricultural fair to be held at Buhl, Idaho, in September.

Two hundred sacks of recently harvested grain burned at Pendleton, Oregon, last week.

Two large irrigation projects are being planned for Northern Humboldt County, Nevada.

Hermiston, Oregon, promises an immense grape yield. This is the first large crop in that section.

Idaho sheepmen are complaining at the extremely low prices being offered for spring lambs.

Vetch seed growers at McMinnville, Oregon, are finding greater profit from that crop than most any other farm crop.

Eastern Washington grain growers are complaining because of extremely high prices and short supply of grain sacks.

Grain growers at Goldendale, Washington, are making a fight in behalf of shippers of the Klickitat Valley for reduced freight rates.

Grain and all other crops on a strip of land four miles wide were recently destroyed near Miles City, Montana, by a terrific hailstorm.

The Canadian Pacific has made a material cut on the freight tariff on apples to all points in Canada. The cut amounts to 25 to 40 per cent.

Union County, Oregon, is in the midst of the greatest harvest ever given to that section. The county will produce about two million bushels of wheat.

Cocoons of an insect believed to be the brown-tailed moth have been found in orchards near Seattle. This is the first of this pest west of the New England states.

The Salt Lake Valley of Arizona is finishing its harvest of the biggest crop of sugar beets yet produced. In addition the sugar content is higher than in past years.

A Colorado cantaloupe grower has learned that by a system of pruning his vines he can more than double the production per acre. He plants very close together, then prunes back severely.

The Wenatchee Valley Orchard Company is installing an immense pumping plant which will lift the water 860 feet. This is said to be the record lift for irrigation purposes on this continent.

The law passed by the legislature of Washington which made it possible to collect cost of removing various weeds from ranches a lien to be collected at the same time as taxes, has been declared unconstitutional.

Franquette walnuts at Sheridan, Oregon, are showing excellent growth and promise to bear well. The next meeting of the Fruit Growers Association of that section will discuss the matter of more extensive walnut planting.

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PRICES ARE LOWER RIGHT NOW THAN AT ANY OTHER time of the year. If you need hens take our advice and buy them right now. We can supply fine young White Leghorn yearling hens at $8.50 and $9 per dozen. No matter how many you wish, we can supply them at this price right now. These prices are good this month only. In July and August hens are worth more. In September these same hens will be selling at $12 and $15 per dozen. Buy them now and make a big saving. Send today for catalog of prices on baby chicks of all kinds, hens and pullets, etc.

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The program and arrangements now completed settle it that the State Fair this year will be the biggest and best ever held in California. Besides the largest industrial and live stock exhibits, the ***Biggest Purses and Best Races,*** the program includes:

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Profit in the Poultry Yard

Practical poultry people who may have ideas from their experience as to methods of feeding and housing and general care of poultry will convey a favor upon the Cultivator and its circle of readers by sending in concise accounts. Mrs. Basley is always willing to answer queries which with the experience of others should make this a most valuable feature in poultry life on the Coast. Opinions or matters of a personal nature should be omitted, but a concise statement of facts is always valuable.

MILLIONS IN IT?

By Mrs. A. Basley.

Millions in it? There are two sides to almost every subject. One says, "There's millions in the chicken business," and another asserts that "There is nothing in it." Which is right?

Statistics show that there are millions of hens at work and billions of eggs laid, so there really must be millions of dollars in the business as the report of the Secretary of Agriculture shows, but they are not all in one place nor under the control of one man or even a few. When we talk of billions or even millions few can comprehend the magnitude of such numbers applied to so small a thing as an egg. We really cannot "take it in." Just as we cannot "take in" the vastness of the ocean, or the number of the stars. We just have to accept the fact. Though the poultry industry, the raising of fowls and the output of eggs be enormous in the aggregate, yet it is composed of small things, occupying small spaces scattered over many localities and giving employment to hundreds of people many of whom are women and children. The poultry business is one of the biggest little businesses of this country and worthy the consideration of full grown men and women of mature minds and good business ability. In fact, some of our most successful poultry raisers are those who have brought to the work an educated mind with the judgment and ability gained in other lines of business. Yet there are others also to be found who have been successful in the mercantile field who have found the little chicks too much for them.

Eggs and fowls are no longer considered as luxuries, they may be classed as staples and the demand for them is greater than the supply. Ask any business man "Is there money in any commodity where the demand is greater than the supply, and hear him laugh.

It does not take an expert mathematician to figure out that a shortage in the supply and an increased demand mean good prices for all the good stock that has been produced in California this season as well as for purely commercial stock and market eggs. There is no doubt about it and housekeepers will realize this acutely as the prices of those little insignificant eggs go quietly soaring higher and higher this fall. The outlook for housekeepers is not so alluring, but for the poultry raiser, for the raiser of a "few hens" in the back yard this will be a banner year.

Still there are some who will miss the opportunity, some who do not have the "stick-to-it-iveness" that is an essential in the poultry business. Too many people are easily discouraged and while they may start out with absolute confidence in their ability to succeed they succumb to the first adverse wind, give up in despair and vote the whole business a failure. Now what man has done man can do again, and with the constantly increasing demand for good poultry and poultry products and also for high class exhibition poultry, there is no good reason why a hundred more extensive poultry plants should not be built up within the next few years in Southern California, and every one of them prove profitable to their owners.

August was the most discouraging month in the poultry yard for me. In August the old hens were commencing the moult, the pullets were only beginning to lay, the hens looked shabby and apparently felt as uncomfortable as we would in an old worn-out faded dress, there were feathers blowing about the yards or heaped in a corner or lodged between the fences and although the yards were swept once or twice a week it was difficult to keep the feathers down. Then to cap the climax August was the month of the smallest cash returns and the receipts did not cover the food bills. August is the month to be met with grim determination not to give up. I could almost have sympathized with a man who came to see me one August, who told me he did not bother about his hens in the summer, for they did not lay, he "just let the blamed things rustle for themselves." Poor things, just when they needed special care and attention.

In the months of August and September there is apt to be the greatest mortality among the old hens and the pullets to be raised for winter laying can easily be "put out of business" by neglect of their comfort. Lack of shade in these warm days is a common cause of failure to keep the pullets in good condition. Lack of clean water, shaded from the sun, is another cause, for when the water becomes warm it is a good medium for the culture of all sorts of harmful bacteria and diseases of many kinds may be traced to the impure water. Plenty of green feed is another requirement in these warm days and above all cleanliness in the houses and freedom from vermin. A little lack of attention, some few days of neglect may destroy all you have labored for and done during the breeding and hatching season. It is like running a race and quitting before reaching the goal when success was so near just for the lack of making an effort at the time it is most needed. When your enthusiasm begins to wane and you become too tired to do the little but necessary things for your chickens remember that next season's prize winners get the finishing touches put on in the next two months. It will be too late and you will have missed your opportunity if you neglect your chance now.

HARES.

By Daniel E. Caldwell, Los Angeles.

The rabbit's value as an economic factor in the pressing problem of the world's food supply has been demonstrated and insures the permanence of the industry to the breeder for the market while his value to the fancier is apparent when one is acquainted with his beauty, intelligence, docility and habits, points which delight the heart of the fancier.

We are firm believers in the success of the rabbit industry, but in this, as in things of a like nature, conservative talk and figures must be dealt with. Rabbits are without doubt much easier to raise than chickens,

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All Prices Greatly Reduced Through Our New and Improved Methods of Modern Merchandising

The Why of It

Solely for the special reasons of its advantages to you and us. Through this new method, "direct to you," we have wonderfully enlarged our output and as well our buying opportunities, creating lower prices in every instance.

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Your savings on the groceries you buy, on the farm implements you need, and upon the very clothes you wear, may be made a worth while item if all purchases are centered here. Cooperate for your own advantage.

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Little can one farmer realize just what methods of economy his neighbor is practising—the buying is very important, and those of your nearest neighbors who are buying of us are harvesting an economy crop worth while.

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It is only recently that we have inaugurated this better merchandising method. The actual savings and wonderful economy are now within your easy reach. Look over the following lists carefully—every item a money saver.

Buy Direct and Save Middlemen's Profits

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Peaches, lemon cling, gallons, 2 for 56c; per doz	$3.25
Cherries, gallons, each 40c; per doz.	4.50
Corn, extra quality, 12 for	.95
Tomatoes, extra quality, 12 for 95c; per case	1.85
Flour, Queen Anne, best quality, per bbl	5.50
This flour is put up in regular toweling sacks; per sack, $1.40.	
Crab Meat, fancy, 1-lb. tins, per doz.	2.75
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Sweet Pickles, extra fancy, quart jars, each	.27
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Dill Pickles, 1-gal. kits, each	.70
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Orange Marmalade, 5-lb. crocks, each	.59
Macaroni, 5-lb. boxes, each	.33
Chipped Beef, ½-lb. tins, doz	1.40
Cottolene, 10-lb. pails, each	1.39
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Gold Dust, large size, each	.19
Dairy Salt, 50-lb. sacks, each	.35
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Cluster Raisins, fancy, 5-lb. boxes, each	.39

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Deep Pudding Pans, 1½-qt., each	.07
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Hydrated Lime, 100-lb. sacks, each	1.25
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48 inches high, per roll	2.60
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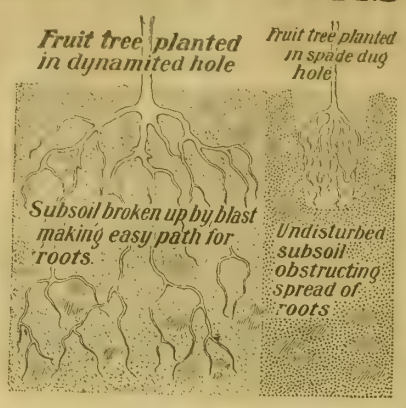
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Subsoil broken up by blast making easy path for roots.
Undisturbed subsoil obstructing spread of roots

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6-year-old apple tree, planted with spade, in the same plot

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If your dealer cannot supply you, write us, and we will send you samples and price.

Made in California from fresh Packing House Products. Look for the word "Special" in red ink on every sack.

Western Meat Co., San Francisco, Cal.

and while we can not expect them to suplant the poultry interests, nor do we want them to do so, yet we opine that this line of culture can and will become a strong ally of the poultry business.

The nature of the rabbit to reproduce its species so rapidly makes it possible to raise them in great numbers. The small space necessary to accommodate them and the nature of food required, brings the cost per pound at a marketable age within a nominal figure.

Prime beef is at the present time almost a luxury, and those who reside in large cities and buy cheap steaks do not always get what they want, and are liable to get a horse on their hands, or, at least, a part of one. Banish the thought, but the fact remains that such things do occur and that, too, much on account of the scarcity of beef and the high price of prime steak. Conditions are continually changing, and as the supply of certain products becomes limited, the price goes skyward and beyond the reach of many.

Belgians, New Zealands and Flemish rabbits can be raised to three months of age properly and sufficiently fed, not to exceed 10 cents per pound, actual cost, and as the meat will bring from 20 to 30 cents per pound dressed, it can be readily seen that the balance is on the right side.

Belgians.

The Belgian hare is pre-eminently the animal for the fancier as well as for the practical market breeder. Because of its general food qualities, it possesses the unique distinction of being acceptable to the fancier and to the farmer alike. This then is the guarantee of its permanence; for without a substantial, practical foundation, any fancy, however fascinating, would soon have had its day.

A full grown Belgian hare weighs from eight to twelve pounds. Their meat is juicy and tender, making them fine for the table. They are very prolific, commencing to breed when only 6 months old, producing their young four to five times a year and from five to twelve at a time. They require but little attention and thrive well in small quarters.

New Zealand Hares.

This valuable breed was imported to this state about six years ago from New Zealand, and they are fast displacing the Belgians for both fancy and market purposes. They are not quarrelsome like the Belgians, therefore large numbers may be kept together with little danger of them fighting. Their strong points compared with the Belgians are: They will reach market size in less time. The meat is white and more acceptable to the fancy trade and last, but not least, they are always in good market condition. They are good breeders and attentive mothers. In color they are a reddish buff.

Flemish Giants.

They were introduced to this country about the time of the fatal Belgian hare boom and suffered with that and other breeds when the crash came.

They have recovered, however, very rapidly and are of the foremost varieties in popularity today, with great probability of becoming the leader.

The standard weight, that is, the weight considered by leaders of the fancy to be fairly large, is 11 pounds for bucks and 13 pounds for does, and most specimens come up to that requirement when in condition.

The Black Flemish are just as pure as their gray brothers.

In order to obtain the black ticking without which the Gray Flemish coat lacks in fine appearance, it was necessary to introduce black blood.

In all particulars, excepting color, they should compare with the Standard Flemish. This breed is destined to become one of the most valuable for several reasons.

The herd will look much more uniform, which is always a point to be desired, the same as in all other stock. The pelt is more valuable than that of any other breed of rabbits.

Black bucks mated to does lacking tone and color, infuse new vigor in their offspring, always being strong and hardy.

STATE FEDERATION OF POULTRY ASSOCIATIONS.

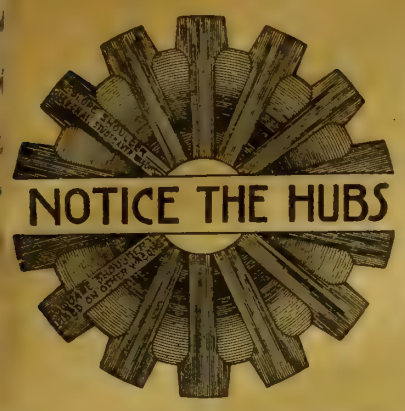
During the recent Santa Cruz Poultry Show delegates from various associations over the state gathered and took further steps looking toward preparing for the "greatest poultry show in the history of the world." This is to be held in connection with the 1915 Exposition at San Francisco. The idea is to go into the matter of the poultry end of the show and bring the attention of the management of the great fair to the importance of giving poultry its just position. The pressure brought upon the directors to make every feature of the fair supreme will be such that certain of the less spectacular features may be sidetracked with small attention. This organization of poultry lovers will endeavor to secure a just proportion of the funds and to make this, as noted, the very greatest poultry show in the history of the world.

Mr. Gibson of Oakland was the presiding officer and the delegates were welcomed to the city of Santa Cruz by its mayor. J. T. Brooks of San Jose, first temporary secretary elected at the San Jose meeting, found himself unable to serve and Mr. W. H. Bissel of Livermore was elected to fill the office in the temporary organization. Mr. L. C. Byce of Petaluma Incubator Company was elected delegate to attend the American Poultry Association meeting held in Denver next week. He is to present the matter before the association and secure its co-operation in the campaign which will lead up to the great show.

Of course when such a body of poultry enthusiasts get together, general poultry matters, even to the cost of production, are sure to be discussed, but in the main the entire meeting was devoted to the one great question of perfecting a great state organization which should aid in every way possible the covering of this great exposition. A committee was appointed to aid in forming the state organization, the committee consisting of: E. R. Evert, San Jose; E. L. Andrews, Watsonville; Henry Berrar, San Jose; Dr. G. I. Royce, Los Angeles; Wm. W. Hirsch, Irvington. Messrs. Gibson and Cobbledick of Oakland were appointed a committee to co-operate with the live stock commissioner whom Governor Johnson appoints for the 1915 Exposition.

The next meeting will be held in Los Angeles January 6, 1912, at which time the organization is expected to be perfected and several forward steps taken.

As the chicks get larger, they should be provided with larger coops, otherwise their bodies are liable to be deformed from crowding one another too much.



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Why aren't they split and cracked like the ordinary wagon?

Because the ordinary wagon hub is made from oak, a wood that splits and cracks very easily, while

Studebaker WAGON

hubs are made from *Eastern black birch*, a very springy, tough wood, chemically treated, with great weather resisting qualities.

Western birch is used by some manufacturers, but it is even poorer than oak. It is *brashy* and will not stand the strain.

Studebaker hubs cost more than any other hub on the market, but they are stronger and wear longer.

Another reason why you should buy a *Studebaker* from

Newell Mathews Co.
Established 1886
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Paint your house when it needs it and use the best paint—that is the whole story of paint economy. The longer you put off painting the more paint will be required. Paint made of

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We will send you free on request color schemes and miscellaneous painting instructions that you will find of real practical value. Ask for Help-2356

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Burns common coal oil. Generates gas. Gives 350 candle power light, 20 times more brilliant than common oil lamp, gas or electricity; Burns 5 hours for 1 cent. White, steady light, fine for reading and sewing No noise or explosions. no smoke or odor. Last longest. Burner fits other lamps.

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Queries

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Mildew on Grapes.

Is it judicious to feed mildewed grapes to your chickens, if thoroughly washed, as a ration of green food at noon?—Subscriber, San Gabriel.

It is not "judicious" to put it mildly. Mildew is a fungoid poison and it would be difficult to wash the grapes sufficiently to eliminate all the poison. Hundreds of chickens and mature fowls died at one time in Los Angeles from eating mouldy meat. Chickens are usually very fond of grapes and would be very apt to eat a considerable amount of the mildew and I would consider it highly "injudicious" to feed the grapes even when washed. —Mrs. A. B.

Prolapsus of the Oviduct.

Some of my year-old White Leghorn hens I noticed bleeding at the vent and all the other hens in the pen trying to eat them up. They did sever about six feet of the intestines of one hen before I could get to her. They protrude at the vent, strain a good deal. All are laying hens. If I can get the hen away from the others before they injure her too much she gets well by applying a little castor oil to the affected part. I feed wheat, barley, corn and wheat meal and bran, and they have all the chopped green alfalfa they want twice a day and dripping water all the time. I also have some 8-months-old Barred Rocks that go down on their legs, sit down and drag around when they move. One has been down that way for a month. They don't have much use of their legs. It seems like rheumatism. I would be very thankful if you could give me a remedy for these troubles. —Mrs. J. A. C.

Your hens have, I think, prolapsus of the oviduct. Dr. Salmon says: "It is frequently observed in hens which have been great layers. Overfeeding, too stimulating food, constipation and straining to expel large eggs are the direct causes. It may also occur from any condition (such as too much fat) which prevents the passage of the egg." As soon as symptoms are seen catch the bird and examine it carefully to determine if an egg has been arrested in the passage. If there are no signs of the presence of an egg, apply carbolated oil or lard and return the part by gentle pressure. Keep the bird in a small coop where it will be quiet until it has recovered." I would add that I think you are giving rather too much heating food and would advise you to give a little Epsom salts in the drinking water for at least a week to all the flock, a level teaspoonful in a quart of the drinking water.

The 8-months-old Barred Rocks have not had enough exercise to keep them vigorous. If growing chickens get their food too easily without exercise the legs become weak, the chicken gets too fat and the liver does not work as it should, then the chick gets rheumatism or indigestion and will even if cured never make a really good layer, so I advise you to eat them before they get sick, but if you want to keep them make them scratch for every grain they eat and give them all the green alfalfa that you can make them eat by cutting down the grain and also give them the Epsom salts, unless you want to eat them soon.—Mrs. A. B.

Temperature for Loquats.

What degree of cold will the loquat

This Interests Every Orange Grower

How often have you envied your brother irrigator growing alfalfa, with his simple efficient centrifugal pump, and compared it with the heavy deep well pumping plant you operate.

This is made

from a photograph

of a successful centrifugal pump for deep wells. It is now operating in Southern California, against a head of 160 feet, and exceeding in every respect the duty that was expected of it.

Note its compact form, the smooth flow lines, the simplicity of every part. Inside as well as outside it is equally simple. Any ordinary amount of sand will not affect its efficiency.

If you are troubled with sand, or contemplate installing a high head pump, your investigation of this pump is desired.

GEO. E. DOW PUMPING ENGINE CO.

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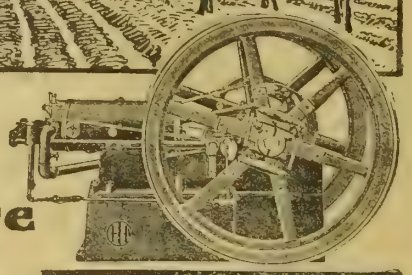
235 S. Los Angeles St.
Los Angeles

We also build an improved type of deep well pump, and interested parties are requested to write for a full description of the

DOW Non-Pulsating Pump

Plenty of Water — When and Where You Want It



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will make you independent of the local rainfall by giving you perfect control of the water question. In addition it will do all other kinds of farm work, such as grinding feed, operating the clover huller, fodder cutter, etc., more economically and dependably than any other engine. The wonderfully strong construction will insure you against delays and guarantee you reliable, economical power for years. Not only that, but in choosing from the I H C line you can select the engine best suited to your individual needs.

Vertical type—2, 3,25,and 35-horse power; horizontal—1 to 25-horse power; semi-portable—1 to 8-horse power; portable—1 to 25-horse power; traction—12 to 45-horse power; sawing, pumping, spraying, and grinding outfits, etc. Built to operate on gas, gasoline, kerosene, distillate, or alcohol—air-cooled or water-cooled. See the I H C local dealer, or, write nearest branch house today for our new catalogue.

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I H C Service Bureau

The purpose of this Bureau is to furnish farmers with information on better farming. If you have any worthy questions concerning soils, crops, pests, fertilizer, etc., write to the I H C Service Bureau and learn what our experts and others have found out concerning those subjects.

Spraying

NOTICE: To People Who Spray—or Ought To

The Bean Spray Pump Co. are celebrating the twenty-fifth anniversary of their organization by making the most important single invention ever added to a spraying outfit. It wonderfully increases the value of their new sprayers and can be fitted to old outfits.

On the quarter century anniversary they have also made the power sprayers much more complete than ever before and then reduced all prices lower than ever.

You are cordially invited to see these new outfits. They will be exhibited so far as possible in every locality where two or more parties are interested. The itinerary is now being planned and a prompt reply on whichever blank below fits your case will make it possible to let them show you what they have.

Bean Spray Pump Co.,
212 W. Julian St., San Jose, Cal.
Gents:

I expect to buy a { Power Sprayer / Hand Pump } this season, and, without any expense or obligation on my part, I should like to have a copy of your new catalog and to see your latest outfits, including new invention.

Name.....

Address.....

Bean Spray Pump Co.,
212 W. Julian St., San Jose, Cal.
Gents:

I have a { Power Sprayer / Hand Pump } but without any expense or obligation on my part, should like to have a copy of your new catalog and to see your latest outfits including new invention.

Name.....

Address.....

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Fifth Floor Hamburger Bldg., Los Angeles—100 feet above street-noise and dust.
Entire year—enter any time. Catalogue—27th year. F 1850. Main 2805. Edward King Isaacs, Pres

stand and bear fruit?—Subscriber, Riverdale.

It will depend upon the time of the cold weather, but as the tree blossoms during November and December when cold weather is more likely to come, we should say the temperature should not fall below 28 to 30 degrees. Yet we know trees in sections where the temperature has fallen to 20 and they still have occasional good crops of fruit. After the tree attains a few years growth, it has been known to stand as low as 15, but we do not think such conditions would induce regular bearing.

Hogs Eating Chickens.

What will keep hogs from eating chickens? Can anything be fed to them which will stop the habit?—Subscriber, Wasco.

Once the habit has been formed we do not think it can be corrected. Supplying blood meal in the ration or bone flour might prevent the craving, but we assume the habit, like the egg-eating habit of poultry, once formed, will remain.

Yellow Leaf.

What is the trouble with the enclosed lemon leaves? They turn yellow and sometimes drop off. Some are also covered with smut and honey dew. They have had some silver mite and red spider. Work is shown on the fruit by the silvering of the lemons and russeting of the oranges. Have recently sprayed with .03 solution of lime-sulphur. Have seen none of their work since spraying. — Subscriber, Lakeside.

The yellowing of these leaves is due, doubtless, to chlorosis which is a little understood disease. To give an outline of the various treatments recommended would require several columns. Presumably it is a physical trouble and the bringing of the trees to good condition through fertilizing and improving mechanical conditions of the soil and ridding trees of pests, will aid in this. The amount of smut over the leaves would indicate black scale or an abundance of aphis which is causing the honey dew which gives the soil for growth of the ordinary black fungus. We think your treatment of spraying with sulphur-lime solution is the best for red spider.

Fall Strawberries.

How should I treat strawberries set in October so as to secure a crop next summer? Should they be planted on ridges or on the level, and how far apart? What variety is best for this locality?—Subscriber, Fresno.

We refer our inquirer to the Vegetable Garden page of this issue, where this question is treated by Mr. Lobingier.

To Secure Humus.

I have been planning to sow peas this fall in our fifteen year old apricot and peach orchard to plow under for green manure. Would this be wise when I have no water to depend on except winter rains; would it be better to use stable manure for humus? Which is best to use, high-grade bone meal at $38.00 a ton or Mococo superphosphate at $27.00 per ton?—H. S. F., Lakeside.

Without question the application of stable manure will give you a supply of humus quicker than any other method, especially where you have to depend upon the rains you are liable to get a very light crop of peas. If the rains should come late, then the growth would not start until the colder part of the season and you would get very light tonnage. Where irrigation is possible and the planting is done in September, the peas or vetch get fully rooted before the cold season comes and a reasonably good covering is made. The trouble with stable manure is, as a rule, its great cost and often absolute inability to secure it. Without knowing the percentage of phosphoric acid in your bone meal and superphosphate, it would be impossible to give you values. We believe that other things being equal, we would prefer the bone meal, though it might show a lower percentage of available phosphate than does the superphosphate.

Egyptian Corn and Sorghum Poisonous.

Is there a time when, and what is the state in which, fodder of milo maize and Egyptian corn are poisonous to cattle?—Subscriber, Hemet.

Sorghum has been known to poison cattle. It is claimed that under certain conditions of drouth and lack of irrigation that prussic acid is formed and stock have been known to die from eating it. We have never known of a case in California, and Mrs. Sherman has repeatedly written in her articles favorably to use of these fodders. If we were growing these plants for fodder we would be careful to keep plants growing. In such case, we do not know of any danger.

Belgian Hares.

Can you give information regarding the raising of Belgian hares for market? What is the best kind of food and what is the market?—Subscriber, Greenfield.

We refer our subscriber to article by Mr. Caldwell on poultry page of this issue.

Morning Glory.

Please advise me through the columns of your Cultivator of a method of ridding a lemon grove of wild morning glory. I have five or six trees with this plant growing under them. I am each week digging them up as best I can and collecting stems and roots and burning them, but being new to this section I thought advice from you might help me.—F. M. G., Orange.

Your method of work is probably as good as can be followed. There has always been a desire for a royal road for killing out this miserable pest. In the open field where there is no other plant to be injured, covering of the ground with two or three pounds of salt to the square foot will accomplish eradication of bindweed, but of course in an orchard this would result also in the destruction of trees. In taking it out at cultivating time, be careful not to carry any bit of the weed to other sections. It should be cut as fast as it appears through the surface, in fact, should not be allowed to appear above the surface. It can be killed by thorough cultivation and the dread of it should be sufficient to induce its complete eradication.

Measuring Water.

Can you give me a table for measuring water coming through a weir so I can get the number of miner's inches? A board four inches wide is used which gives us a four-inch pressure. The top of the board is on a level with the top of the water and the water is measured that flows between the board and the bottom of the weir.—Subscriber, San Fernando.

We believe our subscriber has a confusion of ideas regarding weir and measuring box. The making of a weir, together with table for calculating number of cubic feet per second was given in the issue of the Cultivator of March 31, 1910, also March 30, 1911. This is too extended to reprint at this time. This weir it must be borne in mind must be made very accurately and perfectly level. Then the table given will enable you to get fairly accurate results. The measuring box is a different thing and perhaps for the novice more accurate, if carefully made. The subscriber is not entirely right in his suggestion that the board above the weir should be four inches wide, though it may be wider, but to secure a four-inch pressure the water should stand four inches above the center of the one inch opening. The properly made measuring box has the opening or slot

exactly one inch wide. In this is a sliding stop which is worked back and forth according to the amount of water until it raises the water beyond the front of the box, as noted, four inches above its center. Then by measuring the length of this opening through which the water flows, the exact number of inches is secured. This box is described in the Cultivator of May 6th, 1909. To reduce cubic feet per second to miner's inches, multiply by 50, that is, under the laws of California a cubic foot per second equals 50 miner's inches, as it does in Idaho, Nevada and Utah; in Arizona and Montana, 40 inches, while in Colorado it is only 38.4.

IRRIGATION POINTS.

By W. Wilson, Los Angeles.

Will you allow me to use as a text the following extract from an editorial on irrigation in your issue of 6th inst?

"Light sprinkling has ruined many crops because of spraying over the foliage in the heat of the day, and in addition not soaking the ground to the depth one often thinks. Furrow irrigation is the best where it can be followed, and for this reason garden planted in rows will be easier to handle. When irrigating, let the soaking be thorough, and the cultivation equally as thorough after the soil is in good condition."

Before I became a reader of The Cultivator I used the surface method of irrigation in my garden, with the result, in warm weather, of losing many plantings. The seeds did not sprout, or, if the plants did appear, they were sickly and did not do well. Later, thanks to you, I adopted another plan, which I will describe, as it may be of benefit to others. I make as deep a furrow as I can with a large hoe, and soak the ground thoroughly with a small stream of water flowing slowly the length of the furrow. I then wait two days or more, cultivating thoroughly just before the soil gets dry enough to cake. Before I cultivate I carefully rake back from each side of the furrow all the dry soil on top. Then I plant my seed, and I never have a failure. Another very good plan is to plant the seed in the dry soil and make a furrow about six inches to the side of the row and let the water run as above until it soaks over to the seed row, and then cultivate, taking care not to disturb the seeds.

I am writing this because I have seen so many failures from irrigating on the flat surface of the soil.

* * *

Mr. Wilson surely has the right idea in irrigation. In fact, we have seen orchardists who go a step farther than he has in the matter of early cultivation after irrigation. Instead of wating two days as he suggests, or "just before soil gets dry enough to cake," the method in question calls for exceptionally deep furrows and far enough apart so that there is dry soil between. After very thorough irrigation the water is allowed barely time to seep away when a plank smoother or light cultivator is drawn over the dust ridges, forcing the dirt into the furrows. Then two or three days later the narrow tooth cultivator gives a very deep cultivation, followed by a light cultivating or harrowing later. It must be borne in mind that the two days following irrigation and before cultivation permits the loss of a quantity of valuable moisture. This method saves a large part of that.

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Orange, Lemon and Grape Fruit Trees, all first class stock. Special prices to parties planting groves. Fresh avocado seeds for August delivery, $3.75 per 100. Also strong Florida sour seed bed stock. Edward A. Carvel, 1454 Oak St., Glendale, Cal.

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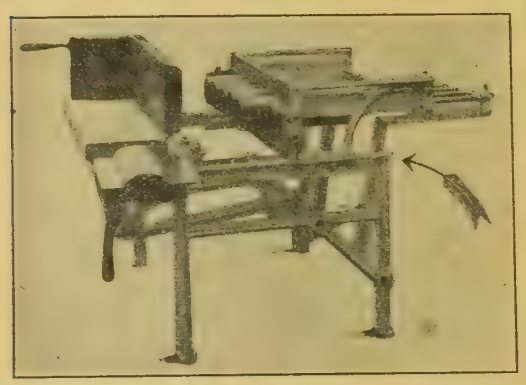

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Household Department

HER LAST POEM.

A melancholy interest attaches to the following poem, which was the last written by Elizabeth Stuart Phelps, who died a few weeks ago.

The Twain of Her.

Now the Martha of her stiffened to her
Down-weighing, of relentless daily care.
Now she straightened upright, would not bend nor break,
But held herself all iron standing there.

When the Mary of her called unto her soul,
And made a moan, and cried to it in vain:—
"Oh, this woman—look! She fretteth overmuch,
And leaves no space for me, Lord, I complain."

But the Martha of her listened with the sigh
Of those too weary or too strong to rest:—
"Tell who taketh then this burden if I cease,
And empty both my hands upon my breast."

Oh, a soul divided is a soul forespent,
She went still asking: "Is it I? Or I?"
Low forever through the silence Mary spoke,
And Martha, sad and sure, did make reply.

Till the irony and harmony of death
Made out of these a concord high and sweet.
When the Martha of the woman, toiling, passed,
Estranged from ease, she sought her Master's feet.

"Now my turn has come, my turn at last," she cried,
"My turn to worship, listening to Thy word."
—Ah, but calm beyond her, fair above her still,
The Mary of her knelt before the Lord.

—Elizabeth Stuart Phelps, in Harper's Bazar.

A PRINCE, A PRINCESS AND A BEGGAR MAID.

She sat waiting in the great surgeon's outer office, with the book of old fairy tales lying open but unheeded in her lap. Among the larger packages she carried was a small one of tissue paper that was sufficiently deceptive in shape and size to hide from the eyes of the curious the flame-colored carnations within.

She had been waiting her turn patiently for over an hour, her eyes showing the weariness of a tired spirit and a frail body. She had tried to pass the time by reading out of the old worn book of fairy tales placed in the rack by the surgeon to amuse some waiting childish sufferer. The book had rested there for years. It was among her earnest remembrances. Treatises, books of science and the favorite novels of the day had appeared and disappeared, but either by some fate or by intended chance the old fairy tales had remained. It had grown to her to be part of the office and she always connected the book with the man and place.

Patients came and went. Newcomers glanced pityingly at the girl in the corner with the book and the small tissue package and the crutch. Her neat but old dress seemed out of place with the refinement of her cameo-like features and the high-bred carriage of her head. The girl, however, did not pity herself. She could have told them how near to the culmination of her hip disease she was; how soon she was to be allowed to drop her wooden support and walk upright and alone for the first time in years. She could have told them whose skill had made the hope a living possibility. She could have told them how, when the great fortune had melted away, the surgeon had insisted that the treatments should not stop, and that was why she would now and then repay him with a flower instead of the old accustomed gold. These things she could have told them if she would, and of her lifelong friendship with him; why the old book of fairy tales and the story of the prince and the beggar maiden had a strange, new fascination for her.

She had become conscious of a faint aroma of violets filling the room of the rustle of silk skirts, and she looked up.

The woman who had entered was young, perhaps a couple of years younger than herself, she thought, with a pang realizing that she was twenty-four. And then—the other woman was beautiful. It was at this point that she had dropped the book in her lap unheeded and looked out of the window. She could see the girl's carriage waiting at the door. It was the first time she had noticed it there. Indeed, it always seemed to be there now, and yet the girl's hurt had not been so very serious—a slightly burned hand that needed dressing, she had heard the surgeon say. Almost unconsciously she hid the flower wrapped in the tissue paper underneath her other packages.

The surgeon appeared at the door. He was not an old man. He was not even middle aged. Yet he had made a great name for himself. He had probably done more for surgery in his eight-and-thirty years than many men had done in 60. He had been decorated abroad and he had been a prominent figure at home and foreign medical conventions. There was something in his quiet voice that inspired confidence, a look in his gray eyes that spoke of hope to a suffering humanity. The girl had heard that quiet voice for years, had known that look since she was a child.

The rustle of silk increased as he appeared at the door, and the younger woman with the violets arose. The girl in the corner drew a deep breath at the smile of greeting that crept around the surgeon's mouth. Their voices came faintly to her. The remarks were commonplace enough. It was the air of proprietorship about the rich girl that hurt. The young surgeon crossed the room to her.

"I know it is your turn, Kathy," he began, with the familiarity of years, "and that it is awfully mean of me to ask you to wait longer, but would you mind if I saw Miss Mason first? She is going out of town."

The girl looked up with a laugh. She was conscious that the younger woman was watching her, and her voice was quite cheery as she replied:

"Why, of course not." She nodded toward the doorway with a smile. Entering 15 minutes later she found the great bunch of violets standing on the young surgeon's table. When she laid down her packages she was careful to hide the small tissue paper one underneath, but the surgeon's quick eye saw it and his quick hand drew it forth.

"What are you trying to do with my flower?" he asked gayly.

"I never said it was for you."

"Certainly not; that would be unnecessary," and he proceeded to unfold the paper and take out the boutonniere of red carnation and geranium leaf. He laid it on the table, where it formed a striking contrast to the violets. A sharp look of pain swept across the girl's face.

"Suffering again with the old trouble, Kathy?" he asked, with a friendly kindliness not to be mistaken.

"I shouldn't wonder, John."

Years ago, when she was a child, he had allayed the pain of treatment by telling her marvelous tales, more wonderful even than those in the old fairy book; later he had amused her with descriptions of places and people he had seen and met, until she half forgot the cruel steel. Today he told her the story of the violets, haltingly, shyly, more like a boy of 12 than a man of nearly 40 years.

Half an hour later, when she returned to the outer office in search of a forgotten umbrella, she saw lying in the chair where she had sat the old worn book of fairy tales, still open at the story of the prince and the beggar maiden. With an instinct of orderliness, bred in these later years by stern necessity, she mechanically closed the book and carried it over to the rack.

"It isn't so in real life," she thought; "in real life it isn't so!" The book obstinately refused to fit into place. "It is all beautiful—in the fairy tales!"

"Love is an obsolete thing among these stupid mortals," fumed the prince in the fairy tale.

"Don't be too sure," snapped the princess, who once had been a beggar maiden.

II.

She glanced around the room of the outer office curiously. It was much the same as it had been in the past. She glanced out of the window almost expecting to see the rich girl's carriage near the curb. She almost expected to see the rich girl herself sitting near, with the mass of violets on her breast; but the room was quite deserted except for the wan and shrunken mite of a baby she bore in her arms and which she had soothed into a quiet sleep. The man at the door who had admitted her told her the surgeon had been suddenly called out on an emergency case, but would soon return, and so she was waiting for him; waiting again as she had waited as a child and a woman; waited as she had now waited for years, and not for herself this time. Still holding the baby, she crossed the room and stood at the old book rack. She was wondering if she would find the fairy tales there. She had never opened a book of fairy tales since the day she had replaced this one here, and she did not put forth her hand to touch it now.

"Life is so different," she said, half aloud. "Life holds nothing as beautiful as this. Life is so real and —hard!"

She turned away, finding it difficult to dispel the illusion of the aroma of violets. So the rich girl—the girl of the silk and the violets—his wife, was dead. It was hard to realize that; almost as hard as it had been to grow accustomed to the idea that he was married. She had gone to the wedding, and in the months that followed, her eyes, grown wonderfully far-seeing, divined the shadows that one by one crept into his. He had never hinted to even her, well as he had always known her, that everything was not as he had hoped it would be; that his marriage had left much to be desired and his heart unsatisfied. He was far too loyal for that. But, instinctively, she knew, and her heart ceased aching for herself and only ached for him. Then the work of years had been fulfilled. The cure had come and the crutch had been dropped forever. His task was finished and her visits ceased. For five years she had been away—teaching. She had never ceased to follow his career with interest. Then had come the tidings of his wife's death two months after she returned to the city. Now, counting on the long friendship and by the love of his life service to sufferers, she was waiting for him again.

An hour later, when he entered, she was still alone. She was holding the sleeping baby carefully in her arms and gazing fixedly toward the book rack.

She was conscious of an added quietness, a graver look in his eyes and a touch of cynicism she could not define, but felt.

"Yours?" he asked, glancing at the child she held, after greeting her.

She shook her head.

"No," she answered; "a poor baby I picked up amid my wanderings and that I could not bear to send to the dispensary. I have brought him to you to cure."

"You are as charitable as ever," he said, briefly. "A rare virtue."

"You are not the man to say that," she retorted, remembering the days when her own account had been canceled by a flower.

He laughed shortly.

"I am selfishly kind sometimes," he said, "such cases advance me in my profession. I get more than I give. I get experience."

She did not discuss the matter further, as she watched him examine the child.

"It is a pitiable case—a pitiable story. Drunken father, dying mother. If you could spare the time——" She broke off.

"We'll have the kid well in a year. See that you bring him to me twice a week. Now, tell me of yourself. The trouble has never returned? It was a cure?"

The story was soon told; told in the even, gentle, womanly voice he had known for years and which he had not heard for so long. It contrasted strangely with the impatient tones of the woman who had been his wife. He fingered a paper weight nervously.

"When I returned to the city two months ago I heard of your wife's death," she said, after a pause. It was characteristic of the woman that she did not add the accustomed conventional words of sorrow she did not feel and which she knew he did not.

"Yes," he said.

There was a long silence. Outside the far-off rumble of drays came to them, deadened by distance. The clock on the mantel ticked loudly.

"It was all a big blunder, Kathy," he said slowly.

"I guessed it—long ago," said the woman.

"I don't blame her," he went on. "I probably was a good deal at fault. But her life wasn't my life, and we never pulled together. That's all."

The woman did not answer, and after a while she left him.

"I want that baby twice a week," he said again at parting.

Twice a week the baby went to him. At first she brought it herself; then she sent him with an Irish woman whom she knew. She wrote that she did not have time to come, and the great surgeon did not question her or evince surprise. Little by little his good work grew; little by little the baby's small wasted form took on new energy and new life; little by little the small, crooked back grew straight again. Once, when the cure was almost complete, he found clasped in the baby's moist little fist a red carnation, which, the Irish woman explained, the baby meant for him.

That night he sat down and asked her to bring the baby herself next time—the last time. The following week she came.

"I wish," she said gratefully, "that I could thank you for what you have done for the baby, that I might pay you"——

"Kathy!"

"Oh, yes, I knew I would offend you," she said, smiling, "but, you see, I don't forget how long my own account is—so long that I can never cancel it. Now, the baby"——

"The baby brought me a red carnation last week," he said, irrelevantly. "I wonder how the baby knew my partiality for red carnations?"

She shook her head in swift denial and turned quickly to the deserted outer office, where he followed her. The baby was contentedly sucking his thumb on the sofa and eyeing them with a wisdom far beyond his years.

The great surgeon took the woman's hands in his. Through the old, worn gloves he felt their coldness.

"Kathy," he said gently, "how blind I was in those days! How blind I have been all my long, successful life, and yet the years have been so bitter and so barren. Kathy, if you wait"——

He bent down, looking into her eyes. The baby crawled from the sofa to the table close by and proceeded to investigate the book rack. The gay cover of the fairy tales caught his eye and he began to tear out the highly colored pictures with mathematical precision.

"I have loved you all my life," the woman was saying, simply.

* * * * * *

The prince in the fairy tale looked ruefully at his golden crown, which the surgeon's small patient had demolished.

"Strange how things come around in this world. I suppose it was the baby."

"Nothing of the kind," said the princess, who had once been a beggar maiden, superiorly. "It was simply the Universal Law."

The prince, not understanding, was silent.

Which goes to show that, under the circumstances, he was wiser than the average mortal man.—Boston Journal.

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San Francisco-Los Angeles Produce Markets

Los Angeles Market

LOS ANGELES, Aug. 2, 1911.

Butter.

The butter market is strong and with an advance of a cent a pound is promising still further upward movement. Receipts approach 50,000 pounds daily.

Prices to trade 2½c in advance of the following Produce Exchange quotations:

Extras	25
Firsts	24
Ladies	23
Country	20
Eastern	21

Cheese.

Local Anchor	16
Oregon Daisy	16@16½
Northern Fresh	15
Domestic Swiss	18
Imported Swiss	30@32

Eggs and Poultry.

Tuesday succeeded in [illegible] enough demand to cau[illegible] cents on nearly [illegible] is not only local, [illegible] country.

Paying prices f. o. b. Los Angeles are:

Local ranch, candled	34
Case count buying price	30
Northern and Imperial	28@32
Eastern	25

Dealers pay for live poultry f. o. b.:

Hens, per lb	12@15
Roosters	8
Broilers	16
Fryers	14
Roasters	18
Turkeys	22@23
Ducks	14@15
Geese	15
Guinea hens, doz	4.00
Squabs, doz	1.75

Live Stock.

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs	7¼
Prime steers	6
Heifers	6
Calves, per lb	6½
Sheep, ewes, per head	4.75
Lambs, per head	3.75@4.25
Wethers	5.00@5.50

Potatoes.

Wholesale prices are:

Sweets, yellow, lb	7@8
New potatoes, lugs	85@90
Burbanks, lug	1.45@1.60
Highlands, ctl	2.25@2.50

Onions.

Wholesale quotations:

Australian Red, ctl	1.75
Silverskins, box	40@50
Yellow Danvers, ctl	1.50@1.60
Garlic	6@8

Vegetables.

Wholesale quotations:

Artichokes, northern, doz	75@90
Asparagus, lb	6@8
Beets, doz. bunches	20@25
Bell peppers, lb	5@7
Beans, wax	3@4
Green chilis	4@6
Cucumbers, lugs	35
Cabbage, sack	95@1.00
Cauliflower, doz	1.50
Celery, new, crate	2.50@3.00
Carrots, sack	1.00@1.15
Corn, lug	35@40
Egg plant	8
Horseradish, lb	12½
Onions, green, doz bunches	20@25
Kolrabi, doz bunches	40
Leeks, doz	45@50
Lettuce, crate	1.00@1.25
Mushrooms, basket	3.50@4.00
Oyster plant, doz	35@40
Okra	5@6
Peas, lb	4@5
Parsley, doz bunches	20@25
Parsnips, doz bunches	40@45
Radishes, doz bunches	15@20
Rhubarb	1.25@1.50
Spinach, doz	20@25
Squash, summer	35@40
Spearmint, doz	25@30
Tomatoes, lug	30@50
Turnips, sack	1.00@1.35
Watercress, doz	25@30

Citrus Fruits.

Valencias	2.75@3.50
Grapefruit	1.75@3.00
Lemons	2.00@5.00
Limes, hundred	1.25

Fresh Fruits.

Wholesale prices on the market are:

Apricots, crate	75@85
Apples, W. Astracan, lug	1.25
Apples, Gravenstein	1.75@2.50
Apples, Crabs, lug	1.50
Bananas	3½@4
Cantaloupes, ponies	1.35
Cantaloupes, standard	2.00
Currants	8@10
Figs, box	75@95
Grapes, Sweetwaters, crate	1.10@1.35
Grapes, Thompson Seedless, lug	1.25
Grapes, Black, crate	1.50
Grapes, Malagas, lug	1.35
Loquats, lb	4@6
Loganberries	7@8
Nectarines, box	1.50@1.75
Peaches, lug	1.25
Pineapples	7@8
Plums, Clymans, lug	1.50
Plums, Satsuma	1.50@1.75
Plums, Tragedy	1.50
Plums, Burbank	1.35
Plums, Green Gage	1.75
Prunes, Simoni	1.50
Pears, box	2.50
Dewberries	4@5
Blackberries	4@5
Raspberries	7@8
Gooseberries, lb	8@10
Strawberries	3@5
Watermelons, lb	1@1½

Dried Fruits.

Wholesale prices are:

Evaporated Apples, fancy, lb	21
Apricots	14@17
Figs, box	1.85@2.25
Peaches	8@10
Nectarines	12
Pears	12@13
Prunes	11½@13½
Plums	10

Beans Dried.

Wholesale quotations:

Limas	6.75
Black eyes	8.00
Pinks	5.75
Lady Washington	4.00
Small white	3.75@4.00
Garvanzas	4.50
Lentils	6.00@7.00
Mexican Reds	4.75@5.00

Nuts.

Wholesale quotations:

No. 1 soft shell walnuts	18
Almonds, IXL, lb	19@20
Pecans, polished	15@17
Peanuts, Eastern	8
Peanuts, California	6
Pine Nuts	18

Honey.

The prices given below are general wholesale quotations, but producers are reported as getting 7, 7½ and 8 for water white, white and light amber.

Wholesale quotations:

Extracted water white	8
Extracted light amber	7
Comb water white	18@19
Light amber	15
Beeswax	30

Hay.

Buying prices f. o. b. cars Los Angeles are:

Barley hay	11.00@13.00
Wheat hay	11.50@12.50
Tame oat	13.00@14.00
Alfalfa	12.50

Grain.

Wholesale selling price f. o. b. Los Angeles:

Wheat, new, cental	1.70@1.75
Corn	1.70@1.85
Kaffir	1.95
Millet	3.25
Popcorn	4.75@5.00
Egyptian corn	1.65
White oats	1.80
Seed barley	1.50

Feed Stuff.

Wholesale selling price f. o. b. Los Angeles:

Alfalfa meal	1.15
Cracked corn	1.90
Cracked wheat	1.85
Shorts	1.90
Bran	1.65
Oil cake meal	2.50
Feed meal	1.95
Rolley barley	1.55
Middlings	1.65

San Francisco Market

SAN FRANCISCO, Aug. 1, 1911.

Butter.

Butter is rather slow in the market and stands at 25, to which it advanced immediately after our last report. Receipts are about 180,000 pounds daily:

Price to trade 2½c in advance of the following Produce Exchange quotations:

California extras, lb	25
Prime firsts	23½
Firsts	23
Seconds	21½

Cheese.

Cal. flats	11@13½
Cal. Y. America, fy, new	13@15
Oregon, fancy	14

Eggs and Poultry.

Eggs are very firm at an advance of 2 cents over last week's quotations, which were made on Saturday.

Official quotations of the San Francisco Wholesale Dairy and Produce Exchange are:

French ranch extras	28½
Prime firsts	25
Firsts	23
Seconds	19½
Eastern seconds	16½
Selec. pullets	24
Hens, doz	4.00@9.00
Fryers, doz	4.50@5.50
Ducks	4.50@7.00
Broilers	2.00@3.50
Roosters, doz	4.00@9.00
Geese	2.00
Pigeons	1.75@2.25
Squabs	2.00@2.50

Live Stock.

San Francisco prices, gross weight:

Steers	4.00@5.00
Cows and heifers	3.00@4.25
Calves, lb	5@6¾
Hogs	5@7¼
Wethers, No. 1	4@4¼
Milk lambs	5@5¼
Ewes, No. 1	3½@3¾

Potatoes.

Wholesale market quotations:

River whites	1.00@1.60
Sweets, lb	5@6
New Burbanks	1.00@2.00

Onions.

Red, new, sack	85@1.00
Silverskins	90@1.25
Garlic, lb, new	3@4

Vegetables.

Wholesale quotations:

Asparagus, box	1.00@1.75
Beans, string	3@4
Beans, wax	3@4
Bell peppers, box	75@1.00
Carrots	60@75
Cucumbers, box	50@75
Corn, sack	75@1.25
Chili peppers, box	50@85
Celery, crate	1.50@2.50
Egg plant, box	75@1.00
Cauliflower, doz	75@1.00
Lettuce, crate	75@2.00
Okra, box	60@85
Peas, sack	1.00@1.50
Hubbard squash	1.50
Summer squash, lug	30@50
Tomatoes, lug	50@75
Turnips	60@75

Citrus Fruits.

Valencias	3.25@4.00
Grapefruit	1.50@2.75
Lemons	1.50@4.00
Limes, Mexican	6.50@7.00

Fresh Fruits.

Apricots, crate	75@90
Apricots, ton	50.00@60.00
Apples, Early Harvest	75@1.00
Apples, box	25@2.00
Apples, new, green, 20-lb box	50@1.50
Cantaloupes, ponies	60@80
Cantaloupes, standard	75@1.10
Cantaloupes, Rivers	1.00@1.75
Nutmegs, large, box	1.25@1.50
Cherries, white, lb	4@5½
Figs, layer	90@1.00
Grapes, Thompson Seed, crate	1.00@1.15
Grapes, Malagas, box	1.50
Grapes, Muscats, crate	1.15
Peaches, box	60@70
Peaches, E. Crawford	65@75
Pears, box	1.50@2.00
Plums, Tragedy, crate	85@1.00
Loganberries, chest	2.50@4.00
Blackberries, chest	2.50@3.00
Raspberries, chest	4.00@6.00
Strawberries, Banners	6.00
Longworths	4.00@6.00
Malindas, chest	4.00@5.00
Pineapples, Hawaiian	2.00@3.50
Bananas	1.00@1.50
Watermelons, doz	2.00@4.00

Dried Fruits.

FRUITS—1911 crop, f. o. b., carload lots, per lb.—Apples, 14½@16½c; Apricots, 14½@16½c; Peaches, 10@11½c; Prunes, bulk basis, 4¾@6¼c; per lb., 4⅜@8¾c, with a premium of ½@1c on large sizes; Figs, 5@6c for White; Pears, 11@14¼c.

RAISINS—1911 crop; Seeded, per pkg. —Fancy, No. 16, 7¾c; Choice, No. 16 7½c; Loose Muscatels, in 50-lb bxs.—Standard, 4-crown, 6½@7c; do, 3-crown, 6@6¼c; do 2-crown, 5½@5¾c. Seedless —Muscatel, 5¼@5½c; Sultanas, 6¼@6½c; Thompsons, 6¾@7c.

Nuts.

Walnuts, No. 1 soft shell	16@16½
Walnuts, No. 1 hard shell	14½
Almonds, '10, N P U	16@16½
Almonds, '10, Nonp	18@18¾
Almonds, '10, I X L	16½@17¼
Pecans	14@17
Chestnuts, California	6@8
Peanuts	5@5½

Beans Dried.

Limas	5.75@6.00
Pink	4.80@5.00
Black eyes	6.00@6.25
Small white	3.50@3.60
Large white	3.25@3.40
Kidneys	5.25@5.50
Garbanzos	2.50@3.25
Bayou	3.75@4.00
Horse beans	2.50@3.50
Red Mexicans	5.00@5.25
Cranberry	3.75@4.00

Hops.

Hops, coast, 1910	23@25
Hops, 1911 contracts	23@26
Hops, Oregon, 1911	23@26

Honey.

Water white, comb, '11	15
Dark comb	12½
Extracted white, '11	9@10
Extracted dark	6½
Beeswax, lb	24@30

Hay.

Scott, Magner & Miller say:

Arrivals for the week ending today have amounted to 4880 tons. This is a sharp increase over what we have been receiving recently. The railroad companies offered cars for loading hay freely along the line, and at points where shipments had been offered. The farmers were ready to load these cars rapidly, and on Monday morning an immense amount was landed on this market. It has not been the intention of the shippers to crowd the market to this extent, but the accumulation took place on account of transportation conditions. On account of this influx the first of the week the market on the general grades might be quoted as having been a shade easier, but this condition adjusted itself toward the end of the week when daily arrivals again became normal.

There has not been much hay moving in the shipping line as the demand has been decidedly moderate, and there is being practically nothing shipped along the Coast.

Alfalfa has been arriving in moderate quantities, and has not been moving off as well as the receivers would like to see it; the summer demand is not active as yet, and only small quantities are being placed as consignments arrive. Some crops have changed hands in the river districts, but no decidedly large operations have been reported as having been brought about, and the future of the market in this line is as yet a little undecided.

The first carload of new straw arrived this morning, consigned to our firm, and while trading in this article is not active, yet the quantity that has been arriving has been decidedly light, and therefore has moved off at our quotations.

We quote the wholesale prices in round lots on today's market as follows, viz:

Fancy wheat hay	14.50@15.00
No. 1 wheat or wheat & oat	12.50@13.50
No. 2 wheat or wheat & oat	11.00@12.00
Choice tame oat	13.00@13.50
Other tame oat	9.00@10.50
Wild oat	9.50@10.50
Stock hay	5.50@6.50
Alfalfa	9.00@10.50
Straw, bale	45@55

Grain.

Wheat	1.37½@1.47½
Barley, fancy	1.36¼
Barley, good to choice	1.32½@1.35
Oats, white	1.50@1.60
Rye	1.42½@1.47½
Mustard, brown	5½
Alfalfa seed	18
Millet	3@3½
Flaxseed	5@5½
Broom corn seed, ton	25.00@30.00

Feed Stuff.

Alfalfa meal	14.00
Bran, ton	28.50@30.00
Feed cornmeal, ton	37.00@38.00
Cracked corn	38.00@39.00
Rolled barley, ton	27.50@28.50
Rolled oats, ton	29.00@30.00
Middlings	32.50@35.00
Oil cake meal	42.00@43.50
Cocoanut cake, ton	25.50@26.50
Mixed feed, ton	25.00@27.00
Shorts	29.00@31.00

Deciduous Fruit Market

SACRAMENTO, July 29, 1911.

Manager F. B. McKevitt of the California Fruit Distributors reports:

The following gives number of cars of deciduous fruit shipped from all points in California for the week (7 days) ending Friday morning, July 28th, 1911:

Peaches: 157½ cars. Shipments are now increasing and will continue to do so for the next week or ten days. Early Crawfords are nearly finished. The crop proved unexpectedly light. Very few straight cars have gone forward. Elbertas are being shipped in a small way and will be in good supply from the first of the week. The bulk of the peaches from California will be moved within the next twenty days. Fruit is of fine quality and satisfactory in every respect.

Plums: 161 cars. Plum shipments continue about stationary, there being a difference of only about four cars between this week's shipment and last. They will continue in about the same supply for another week when shipments will probably decline. Diamond, Wickson, German, Sugar, with a few Kelsey, Splendor and Giant, constitute the principal varieties now offering. We have never shipped better plums than are now being forwarded.

Pears: 237¾ cars. This week's output is probably as large, and perhaps larger, than it will be at any other time during the season. The quality of the fruit is steadily improving and is now as good as can be expected. The greater portion is coming from the Sacramento river, but shipment has begun from Red Bluff and Suisun. The former reports a good crop, but Suisun will ship only about one-third of her usual quantity. Thrips has appeared in some sections and is denuding pear, plum and cherry trees of their leaves. It will have no effect on the crop, with the possible exception of pears.

Grapes: 40¼ cars. Early varieties of grapes are appearing in increasing quantities. The shipment from the northern part of the state is still very light, and consists almost entirely of Fontainbleau. Thompson Seedless from an early section of Tulare County have sold in a small way during the week. Considerable shipments will go forward from Fresno and Tulare County during the next seven days. After that time supplies will be ample to meet all requirements. Thompson Seedless and Malaga continue to go forward from the Imperial District, but owing to adverse weather conditions future shipments from this district are problematical. Mildew has appeared in practically every section where grapes are grown. Prompt measures were taken to prevent its spread and it is not expected that shipments will be affected to any considerable extent, probably not more than 10% at the outside.

Weather conditions north of the Tehachapi continue very favorable.

Comparative Statement of Shipments.

	—July 22d— 1910.	1911.
Cherries	250½	216¼
Apricots	289	223½
Peaches	772¾	344½
Plums	1177	626¾
Pears	950	255½
Grapes	30	18
Apples	43	....
	3513	1647½

Citrus Fruit Market

LOS ANGELES, August 2, 1911.

The exceptionally good prices which prevailed in all markets some two or three weeks ago are not so much in evidence at this time. Prices are still good, but a greater quantity of Eastern fresh fruits is taking up the attention of fruit

Cream Separators, all sizes and prices. Guy F. Kelsey & Co., 106 East Eighth St., Los Angeles, Cal.

dealers and the keenness of the demand has been somewhat dulled. Regular sizes and good fruit are still commanding satisfactory prices, however. The large number of off small sizes accounts for some of the lower quoted prices in the auctions. Shipments from this end are being reduced somewhat and fairly good prices are promised to the end of the season.

Some sales of lemons are made at as high a figure as $4.25 f. o. b. Eastern points, but the general condition of the market is decidedly weak. There is an immense quantity of foreigns in market and afloat. Fortunately California stock is green and in best condition for storing, so that shipments are materially lessening. Given a good hot spell over the East again and the market would be almost instantly cleared, but cool weather continued, no immediate strengthening of the market can be looked forward to.

Shipments.

Shipments of oranges to date since November 1st, 1910: 34,499 cars, lemons 5,819, total 40,318. To same date last season: Oranges 22,640 cars, lemons 3,973, total 27,613.

NEW YORK, Aug. 1.—Eleven cars Valencias, two cars lemons sold; market easier on oranges, unchanged on lemons. Fair and warm.

VALENCIAS—	Avge.
Titus Ranch, fy, San Marino G P A.	$4.15
Euclid, or, Growers' Ft Co	4.50
Uplanders, Growers' Ft Co	4.15
Old Mission, fy, Chapman	5.80
Old Mission, ch, Chapman	4.35
Golden Eagle, sd, Chapman	4.10
Lotus, O K Ex	4.35
Monogram, O K Ex	4.05
Iris, D M Ex	4.60
Violet, D M Ex	4.20
Jasmine, D M Ex	3.95
Whittier, S T Ex	4.30
Wisteria, S A Ex	4.45
Paul Neyron, S A Ex	4.25
Nonpareil, Covina Ex	4.15
Pointer, A C G Ex	4.00
Pet, S A Ex	4.05
El Capitan, S A Ex	3.90
Squirrel, A H Ex	3.65
Prairie Chicken, A H Ex	3.20
GRAPEFRUIT—	
Stag (Nectar)	2.30
Stag (seedless)	2.00
Squirrel (seedless)	2.40
Prairie Chicken (seedless)	2.25
HALVES—	
Stag (Triumph)	1.50
Triple X	4.15
Triple E	3.35
Excellent	3.05
Sunside	2.25

BOSTON, Aug. 1.—Ten cars sold; favorable. Market unchanged.

VALENCIAS—	Avge.
Nonpareil, Covina Ex	$4.20
Quail, O K Ex	4.35
Rey, S T, Fernando	4.30
Urchin, S T, Fernando	3.70
Pointer, A C G, Azusa	4.30
Champion, A C, Denman	4.15
Pinnacle, O K Ex	4.65
Coyote, O K Ex	3.60
Tunnel, S T, Fernando	4.10
Orchard, or, National O Co	4.50
Stag, A C G, Azusa	4.60
Standard, sd, National O Co	3.75
LEMONS—	
Las Fuentes, Crocker-Sperry	3.45
Linda Vista, fy, Randolph Ft Co	2.30
Mission, S T, Santa Barbara	3.85
Montecito, Crocker-Sperry	2.95
Festival, S T, Santa Barbara	3.30
Vista del Mar, ch, Randolph Ft Co.	2.15
GRAPEFRUIT—	
Champion	2.30
Palomita	2.00

NEW YORK, July 31.—Eighteen cars Valencias, two cars lemons sold. Market easier on oranges, unchanged on lemons. Fair and warm.

VALENCIAS—	Avge.
Old Mission, fy, C C Chapman	$5.40
Old Mission, ch, C C Chapman	4.65
Golden Eagle, sd, C C Chapman	4.30
Corona Standards	4.40
Tustin Gem, Tustin Pkg Co	4.40
Stag, A C G Ex	4.75
Red Riding Hood	4.20
Hunter, A C G Ex	3.90
Pinnacle, O K Ex	4.60
Quail, O K Ex	4.10
Coyote, O K Ex	3.80
Iris, D M Ex	4.80
Violet, D M Ex	4.40
Prong Horn, O K Ex	4.35
Prong Horn, No. 10, O K Ex	4.20
Shamrock, xc, Placentia M O A	5.85
Cambria, sd, Placentia M O A	3.90
Titus Ranch, fy, San Marino G P A.	4.30
Titus Ranch, San Marino G P A	4.30
El Toreador, sd, San Marino G P A.	4.00
GRAPEFRUIT—	
Golden Eagle	3.05
GRAPEFRUIT—HALVES—	
Corona	1.60
Primrose	1.15
Blue Globe (Florida)	1.60
LEMONS—	
Limoniera Co, Loma	3.00
Liberty	2.75
Foxaway	2.00

BOSTON, July 31.—Seven cars sold. Weather favorable. Market unchanged.

VALENCIAS—	Avge.
Carmencita, S T, Placentia	$4.15
Glendora Heights, ex, ch, A C G.	4.70
Wisteria, S A Ex	4.55
Rey, S T, Fernando	4.35
Urchin, S T, Fernando	3.80
Colombo, S T, Placentia	3.75
Evolution, A C G Ex, Glendora	4.35
Paul Neyron, S A Ex	4.25
Tunnel, S T, Fernando	4.00
Butterfly, Covina Ex, Covina	4.20
LEMONS—	
Pet, S A Ex	3.95
Red Shield, A C G, Azusa	3.45
GRAPEFRUIT—	
Carmencita	1.30

PITTSBURG, July 31.—Eight cars sold. Market easier on orange and lemons. Warm.

VALENCIAS—	Avge.
Iris, D M Ex, Monrovia	$4.65
Jasmine, D M Ex, Monrovia	4.10
Martha Washington, S S, Tustin	3.40
Cowboy, S S, Tustin	3.25
Premium, or, Benchley Ft Co	4.20
Circus, xc, Sparr Ft Co	3.85
LEMONS—	
Joy	2.45
Plain Ends	1.75
Pennant, Q C Ex, Corona	2.65
Camel, Q C Ex, Corona	2.60
Economy, ch, Randolph	2.25
Princess, Q C Ex, Corona	2.50
Family, Q C Ex, Corona	2.30

PHILADELPHIA, July 31.—Eight cars Valencias and three cars lemons sold.

VALENCIAS—	Avge.
Planet, S S, McPherson	$4.15
Stag, A F, Glendora	4.90
Hunter, A C G, Glendora	4.00
Campfire, S T, Nordhoff	4.20
Golden Pheasant, xc, Ind Ft Co	4.20
Sweetest Yet, fy	4.20
LEMONS—	
Royal, Q C Ex, Corona	2.85
O I C, Q C Ex, Corona	2.30
Green Crown, A C G, Azusa	2.25
Flower, sd, Ely-Gilmore	2.10
Sunset, Q C, Corona	2.60
El Azar, A C G Ex, Azusa	2.65
Euclid, or, Growers' Ft Co	2.70
Plain	1.50

CLEVELAND, July 31.—Two cars Valencias, two lemons sold. Market weak on small size Valencias. Warm and clear.

VALENCIAS—	Avge.
Carmencita, S S, Fullerton	$4.10
Alhambra, S T, Alhambra	4.00
Don Quixote, S T, Alhambra	4.00

CINCINNATI, July 31.—Muggy, raining. Market steady. One car Valencias, three lemons sold.

VALENCIAS—	Avge.
Whittier, S T, Whittier	$4.25
Pico, S T, Whittier	3.80
LEMONS—	
Princess, Q C Ex, Corona	2.00
Lily, Q C, Corona	1.60
Stock Label, V C, Santa Paula	2.55
Pennant, Q C, Corona	2.45
Greenleaf, S T, Whittier	2.05

ST. LOUIS, July 31.—Cloudy and cool. Five cars sold. Market weak on account of weather.

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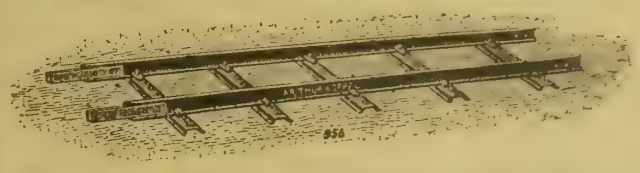

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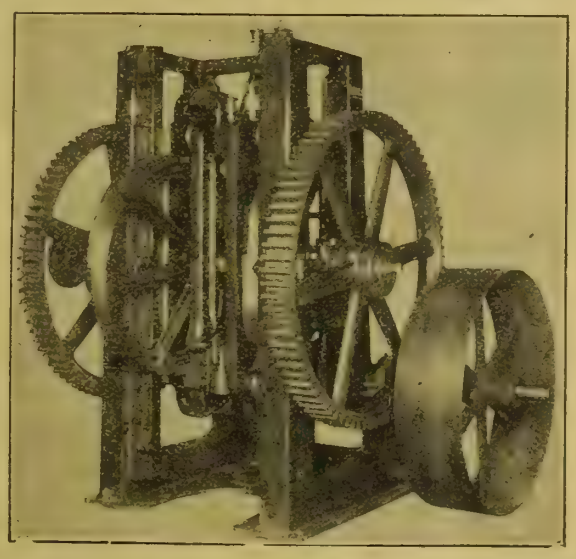

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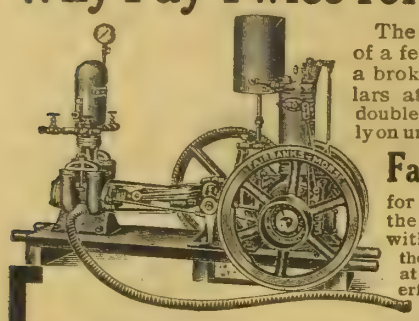

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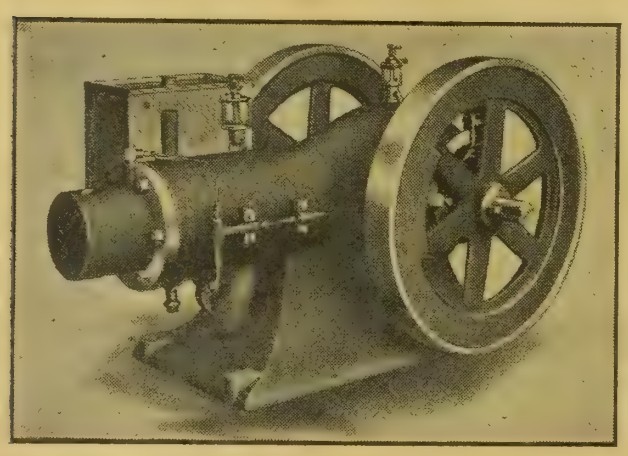

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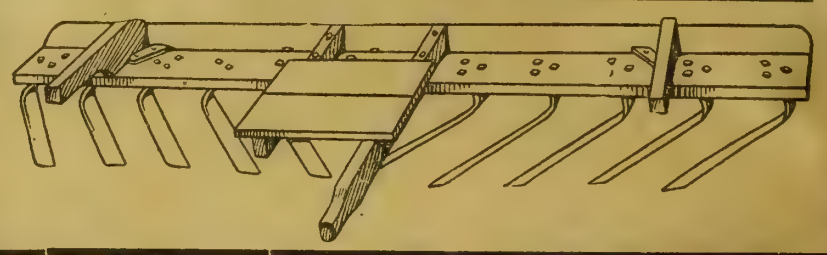

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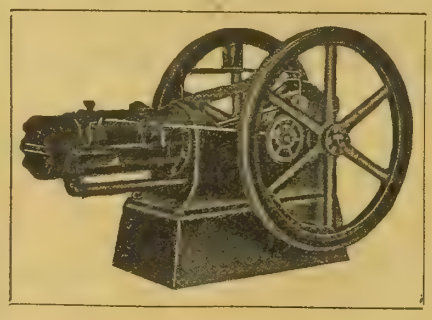

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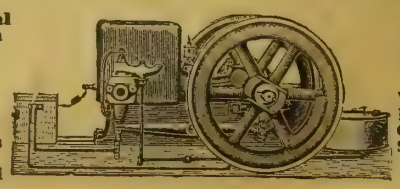

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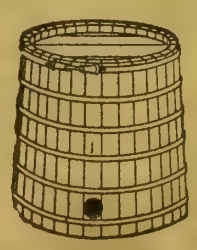

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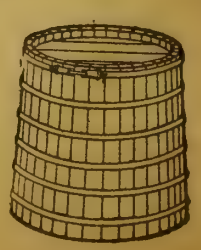

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LOS ANGELES AUGUST 10, 1911 SAN FRANCISCO

Rustic Footbridge in Redwood Park

The above scene is in the California Redwood Park in Santa Cruz County and is used by courtesy of State Forester Homans, who is in charge of that magnificent grove of trees. Regarding this great heritage of the state, Dr. David Star Jordan has said:

"California Redwood Park is a leaf from the greatest of virgin forests, a sample of the redwoods as they have been for ten thousand years, and one which may be preserved for all times. Besides this, it is a botanical garden where the wax myrtle, the California nutmeg-tree, the California whortleberry, the clintonia, the oxalis, and all the other plants which follow the redwoods may be likewise saved for our descendants."

Not as noted by any means, but perhaps meaning more to the financial welfare of the state, are other forests in San Bernardino County which have been swept out of existence by forests fires raging for over ten days. The direct timber loss is not to be considered in this instance with the loss which will be visited upon orange and lemon groves of the valleys below which depend upon the waters of these hillsides.

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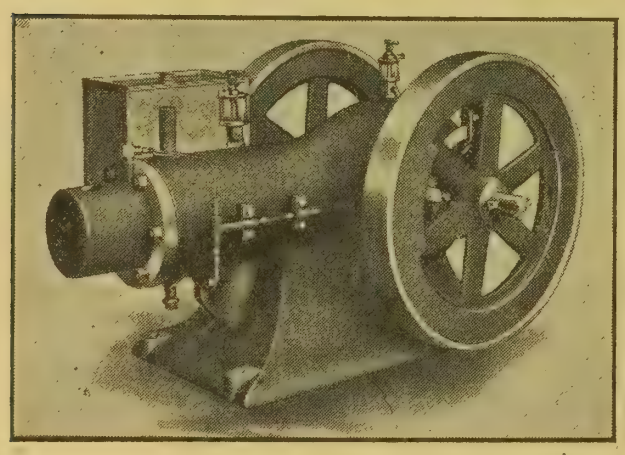
The Simple Gas Engine



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Has 320 acres for you in Utah under the "Dry Farming Act." If you have a "homestead right," I can help you to get 320 acres which will cost you only $500.00; and which should readily sell for $6,400.00, when title is acquired, viz., in five years, AND WITH NO FURTHER EXPENSE TO YOU. Can you equal such a proposition as that? The land is a fine decomposed granite soil, holds moisture well, A 1 wheat, apple and pear land, abundance of good water close to surface, altitude 4500 feet to 5000 feet, therefore exceptionally healthy. You must go and file on said land having two witnesses; residence not required thereafter. Transcontinental railroad close. Rainfall every month in the year, hence crop failure unknown. The Government Statistics show that Utah stands second in the United States on wheat production per acre, (and the altitude assures the best prices); second on oats, second on potatoes, second on alfalfa, first on alfalfa seed, first on sugar beets, first on barley. The average crop of wheat for the period of five years was 27.10 bushels per acre. Cedar fence posts can be had very reasonably.

The locator leases his 320 acres to me for five years. I guarantee to comply with all the requirements of the Government and do better still, by turning his land back to him all under cultivation WITHOUT FURTHER COST.

For full particulars write or come in and let us tell you about it and help you to it.

J. G. BATES

305 Severance Bldg. Los Angeles

California Cultivator

Vol. XXXVII. No. 6. LOS ANGELES: THURSDAY, AUGUST 10, 1911 One Dollar the Year

The California Fruit Industry is Threatened

Every producer should be vitally concerned over the present attack on the California lemon industry. An exchange has well stated: "The proposed reduction in the tariff on foreign lemons. if accomplished, means the wiping out of the duty on all American fruit and nut products which are now protected by tariff.

"If it is logical to remove the duty on lemons, then the duty on oranges may be taken off. The removal of the duty on citrus fruits means loss, not only to the growers in California, but also to the growers in Louisiana, Florida and the South. If there is any good reason for the removal of the present tariff on citrus fruits, the same argument will apply to foreign walnuts, almonds and other nuts. It would also apply to foreign prunes, raisins and dried fruit.

"The whole Pacific Coast is interested in the retention of the duty on the foreign fruits and nut products. Texas is largely interested in the production of pecan nuts. A reduction in the duty on foreign nuts means disaster for the pecan growers of Texas. A reduction in the duty on foreign lemons means, eventually, a reduction in the duty on foreign oranges. This would stimulate the importation of Mexican oranges, as well as Mediterranean oranges.

"Every American dealer who handles California oranges, lemons, dried fruit, prunes, raisins, nuts, etc., knows from experience that the American products are much more wholesome, much cleaner and more satisfactory to handle than the foreign products. Every American consumer is also in favor of the American fruit product, compared with the foreign product. It is a well-known fact that the sanitary conditions in the Mediterranean fruit districts are not the best.

"Every American fruit dealer and every American fruit consumer, North, South, East and West, should immediately urge upon their congressmen the retention, not only of the duty on foreign lemons, but upon all other foreign fruit products.

"Every fruit merchant in California should immediately urge upon his fruit customers throughout the East and South the importance of urging upon their congressmen to retain the present duties on foreign fruit products. This should be done by wire, as well as by letter.

"Every fruit-grower in California and in the West who has friends in the South and East should urge upon them by wire and letter to communicate with their congressmen at Washington to maintain the present tariff duties on foreign fruit products."

Do you grow lemons, do you grow oranges, or almonds, or walnuts, or chestnuts, or raisins, or prunes, or apples, or pears, or apricots, or peaches, or nectarines, or olives, or figs or general farm produce? No matter what, rally to the aid of all products by writing some or all the following an appeal to save the lemon industry:

CALIFORNIA REPRESENTATIVES IN CONGRESS

SENATORS

George C. Perkins — John D. Works

REPRESENTATIVES

John E. Raker	Everis A. Hayes
William Kent	James C. Needham
Joseph R. Knowland	William D. Stephens
Julius Kahn	Sylvester C. Smith

SENATE AND HOUSE CONFERENCE COMMITTEES

SUB-COMMITTEE

Robert M. La Follette, Wisconsin — Oscar Underwood, Alabama

CONFERENCE COMMITTEE, HOUSE of REPRESENTATIVES

Francis B. Harrison, New York	John Dalzell, Pennsylvania
Choice B. Randell, Texas	Oscar W. Underwood, Alabama
Sereno E. Paine, New York	

CONFERENCE COMMITTEE, SENATE

Shelby N. Cullom, Illinois	Joseph W. Bailey, Texas
Boise Penrose, Pennsylvania	F. M. Simmons, North Carolina
Robert M. La Follette, Wisconsin	

Especially write Sub-Committeemen La Follette and Underwood.

Apple Seedlings in the Northwest

An Address by A. W. McDonald Before the Pacific Coast Nurserymen's Convention at San Jose

In 1903 I located at Toppenish in the nursery business with the intention of making the propagating of apple seedlings a part of my business. The first three years were a failure, the fourth year I had a very good stand and grew some very fine seedlings, the fifth and sixth years were again failures, the seventh year I was almost ready to give up, but was persuaded to try again and planted one bushel of seed and got 130,000 seedlings out of the bushel. I then tried twenty bushels this last season and got 2,000,000 seedlings, or 100,000 per bushel, all very fine seedlings. This year I have planted ninety bushels of seed and will get about four and a half million seedlings.

The Northwest is coming to the front as a nursery center, more especially in the propagation of apple and pear trees, and the trees that give the best result in the Northwest section east of the Cascade range are the one-year grafts. I have found the winter season all too short for the putting up of my graft plant, and when buying my seedlings in the Middle West they never got through in time for me to start my grafting as early as I wished, with the result that I was always late in spring in getting out in the field to plant, and have had heavy losses in consequence. This reason, more than any other, has kept me experimenting with seedling growing in the West.

Another bad feature of seedlings from the Middle West is the wooly aphis. The seedling has been grown in the same location in Kansas and Missouri so long that it is impossible to get a block of seedlings there without aphis, while our ground on the Yakima Indian reservation is practically free from them, which is a very strong advantage. Then at the time seedlings can be shipped from Kansas or Missouri, we are likely to have very severe storms and stand the chance of losing our seedlings by frost in transportation, all of which conditions we are free from on the Coast or east of the Cascade Mountains, where seedlings can be grown.

As to growing seedlings west of the Rocky Mountains, we have a great many drawbacks, as east of the Cascades the wind is bad at the season of planting, which dries the ground very rapidly, and irrigating before the seed is sprouted and through the ground is almost sure to reduce the stand one-half, while if the ground gets too dry you stand a chance of having a total failure. When west of the Cascades we have the other extreme, as after the seed is planted and before it gets through the ground, rains are likely to bake the ground so the seed cannot get through.

The apple seedling when sprouting is one of the most delicate plants. It comes through the ground doubled, the seed itself coming through the ground and forming the two first leaves, hence if the ground is not very loose and fine the seed can't get through and the plant will keep growing until it breaks its neck. With all these unfavorable conditions, apple and pear seedlings can be grown in the Northwest to the advantage of the nurserymen, even when a higher price has to be paid for them than for seedlings from other locations. Their advantages over seedlings from other places are:

1. Receiving them early so that work may be begun on grafting and planting done correspondingly early. For instance, 200,000 which we shipped to the Oregon Nursery Company last fall were all trimmed and planted before the seedlings from Kansas were received. Also I loaned 50,000 to another nursery in the Yakima Valley with which to start grafting, and they had them all worked up and had to still wait on their Kansas stock, losing valuable time, which made it necessary for them to employ a larger crew in order to complete their work in season.

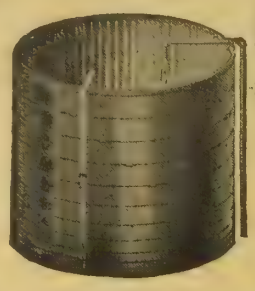
2. Transportation charges — which amount to about 50 cents per thousand on No. 1 seedlings in carload lots.

3. Risk of freezing en route.

4. Wooly aphis on the seedlings from the Middle West, which have cost the nurserymen heavily.

5. And last, but not least, we keep our money at home, which in itself

(Continued on Page 138.)



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Parties contemplating the planting of citrus groves this coming spring will do well to send for our prices soon, as there will evidently be a shortage of strictly first class stock. Write today for particulars, or, better still, pay us a visit so that we may be able to show you just what we have.

Our finely illustrated booklet, "Citrus Fruits," covering the industry from the seed to the market, mailed to any address on receipt of 25c in stamps.

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San Dimas California

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Citrus and Tropical Fruits

CO-OPERATION.

(Continued From Last Week.)

California Cited.

William E. Curtis, the special representative of the Chicago Record-Herald, than whom no other writer is better or more favorably known, writes from California on the subject of co-operation of citrus fruit growers, showing how that organization has made fortunes for the men who were about to give up their industry because of conditions over which they had no control as independent shippers.

Mr. Curtis says, in part: "Co-operation has been the salvation of the orange business. Until it was arranged in 1895 the industry was uncertain, and often conducted at a loss. There have been years when orange growers have been compelled to go down into their pockets to meet deficits and sell their shipments for less than freight charges. In 1892 half the oranges in Riverside County were sold for 10 cents a box, although it cost an average of more than 50 cents a box to raise them. Other years there were large profits, but nothing was certain until the organization of the California Fruit Growers Exchange, which now handles from 60 to 70 per cent of all the citrus fruits grown in the state, and does a business carrying from $20,000,000 to $25,000,000 a year. Last year the Exchange shipped out of the State of California, an average distance of 2,500 miles, 8,500,000 boxes of oranges, lemons and grapefruit, from which it collected $22,500,000. The average selling price was $3 a box. The average cost of producing and shipping was $1.70 a box, which is made up of several items—50 cents a box for growing, 35 cents for picking and packing, and 95 cents for cooling and freight. These estimates will doubtless be disputed, but they are the judgment of the best men I know."

Accomplished in Florida.

Among some of the principal achievements brought about by co-operation of the growers in Florida up to the present time, the following may be mentioned as more or less notable examples:

1. Owing to the efficiency of the Claim Department of the Florida Citrus Exchange, in properly preparing, presenting and pushing its claims for loss and damage, the transportation companies realized that they must give to the Florida citrus grower either increased efficiency in service, care and equipment, or pay the penalty therefor, and adopted the less expensive method; so much better was the service and equipment this past year that the claims rendered necessary are very much lower than ever before.

2. The realization of the necessity for care in properly handling fruit from the trees to the cars, on the part of the growers and associations themselves, has in the two years of the operation of the Exchange so awakened the growers to these important facts that, whereas at the beginning of the operation of the Florida Citrus Exchange 7 per cent decay on delivery of Florida fruit was by general consent considered "sound delivery," the total decay in all the fruit shipped by the Florida Citrus Exchange this year has amounted to an average of only 2 1-5 per cent, yet even this, as slight as it seems, means approximately 18,000 boxes of fruit delivered rotten, meaning a direct loss of $45,000 therefor, and an indirect loss to the remainder of the fruit in the cars showing decay, of probably from $100,000 to $200,000 additional—showing that, as marvelous as this development is, it can and will be still further improved.

3. A betterment in grading and packing that has been the wonder of the receiving trade all over the United States, which, in connection with the decreased decay, has awakened the citrus fruit trade to the realization that only carelessness, and not any inherent deficiency of the fruit itself, has given to the Florida orange its unearned and unenviable reputation of being a "poor carrier."

4. A much more general and decided realization of the necessity for and the use of brands, registered and copyrighted, on fruit of which the owner is not ashamed.

5. Very materially checking the many and serious evils due to the shipment of immature and unripe fruit—this covering a long range of work too extensive to even touch on in this paper, including two years' work with the Pure Food Department of the United States Government, with the boards of health in the various great cities, culminating with our own Florida state law for the prevention of selling, offering for sale, shipping or offering for shipment of immature or unripe citrus fruit.

6. From all the foregoing, results the inspiring of confidence in the mind of the trade in the value and reliability of Florida citrus fruits in general, and the Florida Citrus Exchange's brands in particular.

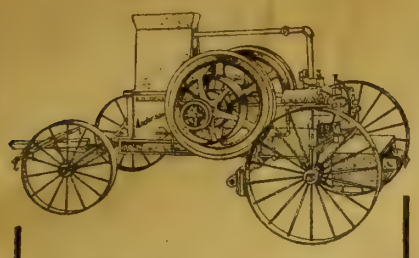
7. The awakening of interest and attention to the necessity for and feasibility of central packing houses, using efficient, trained, regular picking and packing crews.

8. The partial accomplishment of and the positive proof of the necessity for intelligent distribution of Florida citrus fruits to all markets of the United States in direct proportion to their necessities.

9. General and marked increase in returns to the growers of citrus fruits in Florida, not only for the members of the Florida Citrus Exchange, but for the growers of the entire state, as it is the contention and belief of the officials of the Florida Citrus Exchange that the citrus fruit growers of Florida, as a whole, have averaged at least 25 cents a box more, on the trees, for their fruit during the past two seasons than they could possibly have averaged without the efficient and arduous work of the faithful co-operative band that has helped to "hold the umbrella."

10. The demonstration to the growers of the state that the cost of handling citrus fruit from the trees to the consumer can, by general co-operation on the part of the majority of the citrus fruit producers of the state, be reduced to a point where it will be trifling in comparison to that which all of the growers had to pay before the formation of the Florida Citrus Exchange, and, alas, too many of them continue to pay unwisely, and often unknowingly.

11. The active efforts of the United States Department of Agriculture to assist us in our troubles, not only by showing us the necessity for and the



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Fruit day for the El Cajon Valley in San Diego is fixed for August 19th.

methods of properly handling our fruit for shipment, but their assistance in the matter of the foreign investigation to locate the natural enemies of the whitefly and other pests, that are now being actively pursued.

12. The demonstration that the shipping season for Florida citrus fruits is not limited to the ninety days before Christmas, but that it can be, and naturally should be, a period extending from October—for the very early varieties—clear through and to June, during which entire time there can be marketed without difficulty, and at remunerative prices, 300 cars a day of properly grown, matured, graded, packed and distributed citrus fruits.

In closing, I will repeat Webster's definition of co-operation, as "operating together to one end," and state that the end to which we, as citrus fruit growers in Florida, must operate is: To obtain for an honest grower, who offers honest fruit, honestly graded and packed, an honest price for his product.

DROUTH IN FLORIDA.

The Produce News of Chicago reports: Opinions as to the size of the coming citrus crop vary widely. Reports from sections where there was a fair orange crop last year bear out the belief that the crop will be short—fully a third off from the last crop. Growers writing the Produce News, on the other hand, say the effects of the drouth will be shown in September, when they predict a heavy drop.

Based on reports coming to Tampa, Manager Temple is reported as estimating a decrease of at least 1,000,000 boxes from his early estimates, when he stated that a crop of 5,000,000 boxes was probable. This latest report revises his figures materially and he now would not be surprised at a short crop, even 3,000,000 boxes, due almost entirely to the drouth, which has been worst in the citrus growing sections of the state.

J. P. Pilkington, Jr., Florida manager for Crutchfield & Woolfolk, returned this week from a trip to South Florida. He found that the grapefruit crop will be very light all over South Florida. In Lee county there will be a light orange crop. This is in line with reports to the News for the past month. In De Soto county he found an increase in oranges, which he estimates at 20 per cent. The crop of brights will be very light all over South Florida, the great majority of the fruit running to russets. The sizes will be good, as the fruit is maturing nicely and the trees he saw were thrifty and looking fine. There was every indication of the fruit getting the size, though the color was a little backwards. There is no buying as yet and he heard little of prices being set.

From now on large handlers will be getting reports from their correspondents though there will be no estimates of the total crop given out for several weeks. As stated before, until the effects of the present drouth have fully passed estimates are but guesswork.

Another dispatch says:

Drouth is showing its effects on citrus trees. In some groves the leaves are curling up and the fruit is dropping. The shortage of water since the first of the year must be 15 inches. Groves that have been cultivated often look better, but all through the district the prospects are uneven. As a rule tangerines and grapefruit will fall considerably below normal, but oranges will hold their own. There will be a third less fruit about Crescent City than there was in 1910.

All fruit will be earlier by two weeks or more, due to the earlier blossoming. Here and there you find a rather heavy June bloom and this is expected to bring up what would otherwise be a low average. The June blossom is by no means uniform. Grapefruit trees that bore heavily last year are short at present and light bearers a year ago are much heavier now.

Spraying

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On the quarter century anniversary they have also made the power sprayers much more complete than ever before and then reduced all prices lower than ever.

You are cordially invited to see these new outfits. They will be exhibited so far as possible in every locality where two or more parties are interested. The itinerary is now being planned and a prompt reply on whichever blank below fits your case will make it possible to let them show you what they have.

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Gents:
I expect to buy a { Power Sprayer / Hand Pump } this season, and, without any expense or obligation on my part, I should like to have a copy of your new catalog and to see your latest outfits, including new invention.

Name.....

Address.....

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I have a { Power Sprayer / Hand Pump } but without any expense or obligation on my part, should like to have a copy of your new catalog and to see your latest outfits including new invention.

Name.....

Address.....

PUMPS

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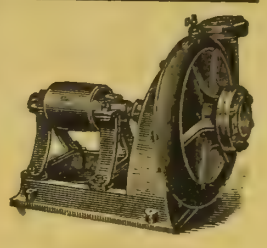

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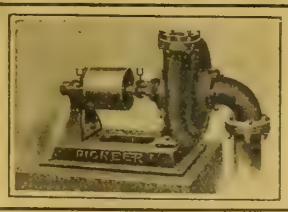

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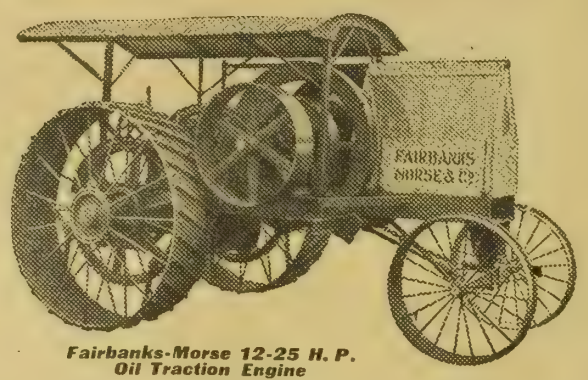

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QUARANTINE LAWS AND THEIR EXECUTION.

By John S. Armstrong, before Coast Nurserymen's Association.

Organized effort to be effective depends on individual effort. The United States is a collective body composed of units which work as whole in the solving of momentous questions of government; so also is this association a collective body composed of individuals, all of whom must work as a cohesive whole if work of merit is to be accomplished. And this thought brings forcibly to mind the fact that the nursery business has been a laggard in fostering its own interests. In the matter of federal, state and county quarantine legislation it has been a follower rather than a leader. We have given no attention to quarantine laws until their operation has been felt in the prosecution of our business. Not until the president of this organization gave personal attention to legislative matters during the last session of the California legislature, has there been a single instance to my knowledge where the nursery business has been represented and received consideration. The result in this instance has been on the whole favorable and satisfactory.

But it is not my purpose to dilate on local affairs, only in so far as they are of general application. The growing and handling of plants is indeed a big industry representing large aggregate capital, which in its ramifications spans the continent and also enters the sphere of international transactions. Thus we have county and state trade conditions, interstate shipments, and exports and imports. Obviously, all these cannot be regulated by mutual agreements. Intelligent county and state quarantine legislation will do much in local transactions, but interstate and international business can only be regulated by federal authority, which it seems to me, is what we must recognize and take the initiative to secure if we are to win the fight against plant diseases and injurious insects. But legislation of itself will not afford immunity—far from it. Insect life and the causes of plant disease are as much a part of vegetable life as the air we breathe and the water nurserymen sometimes drink when nothing else is in sight. But federal quarantine legislation will do much to keep out dangerous ailments of plant life and also any obnoxious insects which are as yet unknown to us. It goes without saying, that with a national quarantine we might have escaped the blight of the gypsy and brown-tailed moths, the San Jose scale, the Argentine ant, the codling moth, the cotton boll weevil, the bark disease of the chestnut trees in New York and surrounding states, besides many others that need not here be mentioned. Mr. Charle L. Marlatt, of the division of entomology, in a recent publication shows that fifty per cent of the important injurious insect pests in this country are of foreign origin and have been brought in directly on nursery and ornamental stock which might have been kept out if an efficient quarantine had been in operation, such as Austria, Germany, France, Holland, Switzerland, Turkey, etc., operate against us. The United States, however, enjoys no such protection, with the result that we have become the dumping ground for refuse stock denied elsewhere. According to Mr. Marlatt, efforts have been made to secure such protective legislation for the past fourteen years, but it has thus far been effectually blocked by a small body of nurserymen who, careless of consequences to the country at large, fear some slight check on the freedom of their operations. The value of such imported stock is said to be about $350,000 annually, while the codling moth, or apple worm, costs us sixteen millions, and the cotton boll weevil twenty-five millions a year, not to mention several other bugs adding one hundred millions more, all of them imported.

In view of these facts, I am in favor of absolute prohibition of entry of stock into the United States, excepting under the careful supervision of experts of the agricultural departments, and even then it might be limited to new or little known fruits and plants, thus stimulating the production of all stock on American soil. This would certainly remove a great danger.

Bill No. 8611 in the national house of representatives, if finally passed, is to regulate the importation and interstate transportation of nursery stock; to enable the secretary of agriculture to establish and maintain quarantine districts for plant diseases and insect pests; to permit and regulate the movement of fruit, plants and vegetables therefrom, and for other purposes. I understand that this bill is now in the hands of the committee on agriculture, which is willing and anxious to give the trade a hearing as to its provisions and operation if passed into law.

California is possibly the only state that maintains an international quarantine at San Francisco and other sea ports, which is certainly a good precautionary measure, which has done much to save us from the invasion of bugs, microbes and bacteria that cause nurserymen and growers to sit up and take notice. We also quarantine against other states, which goes against the grain of the itinerant tree peddler, but in no way alarms the intelligent nurseryman who grows his stuff on his own land to sell to his own trade.

But it is not so much the law and its quarantine provisions that bothers and impedes business; it is rather its execution, and the political appointments that give us that tired feeling for which the medical advertisements prescribe pink pills. Honest inspection by really competent authority is to be encouraged, but when it is otherwise, it becomes a menace, not only to the nursery business but to the entire range of horticulture. For it goes without saying that no one is looking for infected plants and trees—least of all the nurseryman who has his capital so invested. I will admit that the intelligent inspection of plants is fraught with difficulties requiring a thorough knowledge of economic entomology and vegetable pathology, and long experience in the field. Stock so passed on should be allowed to "go through" without unnecessary delays. How many such inspectors have you or I met? How many are there really in the field? A competent inspector is much like a good lawyer whose business is quite as much to keep people out of the law as in it; so also good inspection

service will inspire confidence and respect, and the wise nurseryman will be more apt to co-operate with the authorities than oppose them. If weak men are appointed, see to it that they are "fired" and competent ones put in their places. Don't wait to be haled into court; take the initiative in the formation of sane legislation, and see to it that the execution of the law is properly carried out. A little work in this direction will do much to expedite our business and avoid friction. Honest and competent inspection is what we should all work for.

As has already been said, uniformity of quarantine laws and the number of their execution is certainly a work this association should take up. If the laws are reasonably uniform in all the states, interstate shipments can be handled to greater advantage, and we shall all be in a position to know what is required, and how to meet conditions intelligently as well as economically. This once secured, and also a provision regulating the importation and exportation of nursery stock, the fellow with clean plants and trees has ample protection and an opportunity to get a square deal. But the other fellow with infected stock —well, he'd better clean up or get out of the game.

SEMI-CLING.

Mr. Max J. Crow of Gilroy writes regarding our statement that his new peach, which he tells us has been named the Patison and which was referred to on page 78 of the last Cultivator, is a cling. He says that when fully ripe it is what is generally known as the semi-cling, separating partially from the stone as does the Alexander, Hale and other peaches of that season.

NOTES FROM THE FIELD.

By B. R. Jones, Horticultural Inspector Los Angeles County.

It seems to me that the black scale is hatching earlier than usual this year notwithstanding the cold spring, which would be expected rather to retard it. I found a good many eggs hatched out in the vicinity of Los Angeles before July 1st and on my own trees near South Pasadena I tried the experiment of fumigating about July 6th, using a full Woglum No. 1 dose and plenty of water to make the generation rather slow. On July 17th I was unable to find any live young scale and believe I made a good kill. A little of the tender growth was burned but the trees are now starting out fine. The black scale was pretty bad on them, communicated probably from peppers growing near.

The pepper trees are a problem. All lovers of the beautiful enthuse over them so much that I fear we will never get rid of them, though they are so scaly. And it would be almost a pity to lose them, especially about the cities and towns and there they are the worst. Perhaps if we put colonies of scutellista in them each year at the right time they might keep them at least reasonably clean.

And, by the way, the scutellista larvae are just as lively after the fumigation as before. Experienced men are well aware of the hardiness of the little parasite and say it will develop all right after the scale has been killed by the gas, but the adults will be smaller than normal, which would be expected, as they have no food but spider's eggs. The scutellista is all right if he would only increase his family about ten times as fast.

I have been very much pleased at the fine fumigation work done for red and black scale in citrus groves about Glendale for the past two years. They have a good man up there and I believe one reason of his efficiency is that he measures the trees carefully and he doesn't think he is accurate enough yet. He says he will mark all his tents this year and use Woglum's system. Then he knows what he is doing. I wish every fumigator in the county would do the same. Many of them do not do nearly as good work as they should. One tree will be burned and the next one have left live scale on it after they have been over them.

The Los Angeles commissioner is thinking of requiring every fumigator who does work at the order of the office and expects its help if needed to collect his bills to mark his tents and use this schedule. Commissioner Essig is doing it in Ventura county and Wm. Wood, the new deputy from Whittier says it is the only proper way. Mr. Wood is thoroughly efficient and every one likes him. Stephen Strong takes his place as state quarantine officer at Los Angeles and San Pedro, so that very important work will be properly attended to.

FINE APRICOT.

We have received from Mr. N. P. Nielsen, an orchardist at Hayward, Alameda County, apricots of value. They are exceptionally large and the judgment of two experts is that they are the Blenheim, but we note that Mr. Nielsen says this fruit was grown on a tree which was formerly a Moorpark and was budded over to this variety. He wishes to purchase other trees of the same kind and hence desires the name of this fruit. But while we say the fruit is probably the Blenheim, the safest procedure is to have another tree grafted from this same fruit, which Mr. Nielsen says has done exceptionally well in Alameda County. It must be borne in mind that while this particular Blenheim has done well there, another raised from a somewhat different strain, may not meet the conditions in Mr. Nielsen's orchard as does this one. The rebudding of other old trees or waiting a year longer and securing seedlings and budding the nursery stock from scions or buds from this tree, would appear to promise results to justify the longer waiting. We grant that possibly the budding of this fruit on the Moorpark may have had some influence upon size and color, but it is magnificent and worth the effort of propagation.

PICKED UP IN THE ORCHARD.

Three years of spraying, pruning and cultivation will bring an orchard that you are ashamed of into a condition that you will be proud of.

If you think of setting out an orchard and have had no experience, better hire a good man to show you how.

The inexperienced planter thinks he is getting a bargain when he buys trees three or four years old, but experience will show him that yearlings are better and he should never plant anything over two-year-olds.

Always buy clean, straight trees with short stems, and even then do not be afraid to prune before planting.—Journal of Agriculture.

Walnut growers are hoping for a 15 cent price.

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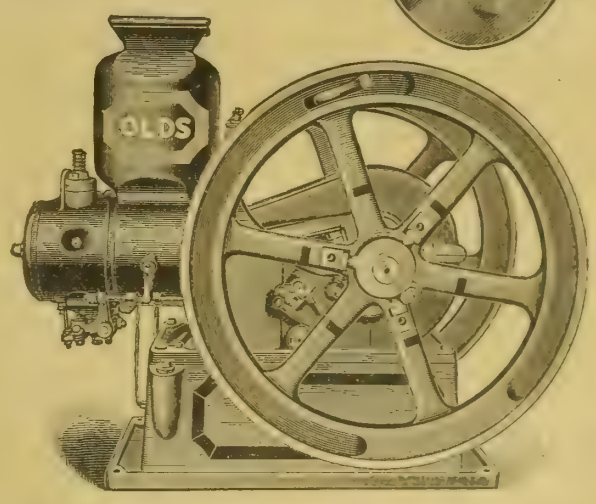

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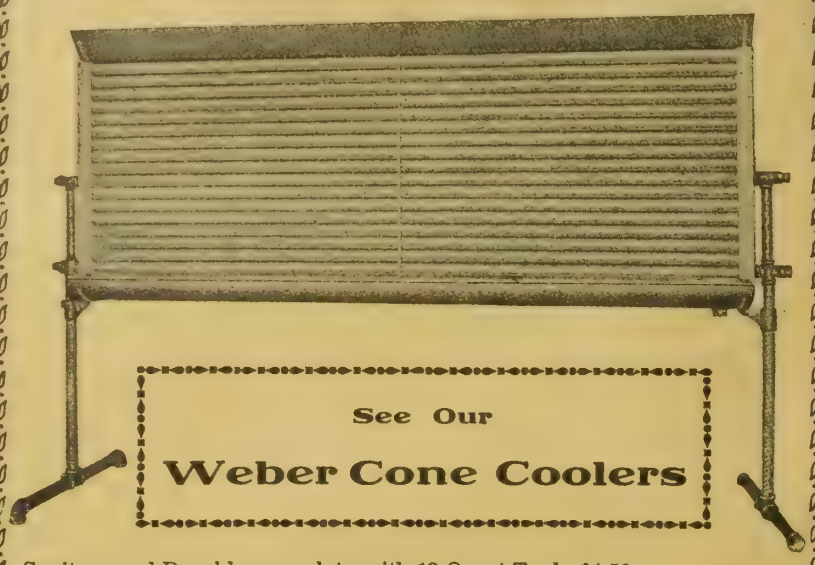

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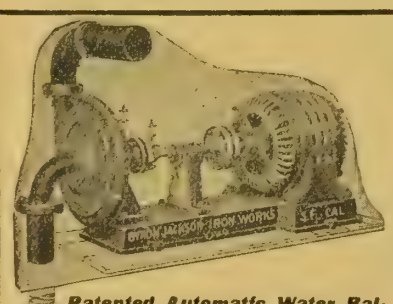

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EDUCATIONAL BUTTER SCORING CONTEST.

By Leon M. Davis, University Farm.

The bad effects of hot weather were plainly shown in the butter which was send in to the fourth scoring of the California butter contest. The number of entries received, however, shows that the participating butter makers are not quitters, but are determined to stay with the contest, regardless of a lack of ideal conditions.

The scores, 90 or above, as placed by Mr. W. B. Thurston, federal dairyman, and members of the Dairy Department, were as follows:

Creamery— Location	Score
Suisun Creamery, Suisun	94
Salinas Creamery, Salinas	93½
University Farm Cr., Davis	93
Laton Co-op. Creamery, Laton	93
Cottonwood Cr., Cottonwood	92½
Grizzly Bluff Cr., Grizzly Bluff	92
Dairyman's Co-op. Cr., Tulare	91½
Cal. Polyt. School Cr., San Luis Obispo	91
Glenn Co. Cold Stg. & Cr. Co., Willows	91
Visalia Co-op. Cr., Visalia	91
Ceres Creamery, Ceres	90½
Santa Rosa Cr., Santa Rosa	90½
Santa Ysabel Cr., Paso Robles	90
Bay View Creamery, Napa	90

Much of our poor butter at this time of the year is due to the extreme hot weather, but reports from creameries seem to indicate that their cream supply could be improved upon by more care on the part of the producers. The several criticisms for "dirty flavor," "cowy flavor," etc., should not have been necessary and would not were cream produced under proper methods. The importance of some form of protection for cream in transit is emphasized by such statements as: "This cream arrived with an acidity of 48 per cent and a temperature of 90 degrees F," or, "The temperature of the mixed cream just after receiving was 100 degrees." The use of can jackets, or at least some form of cover is necessary at this season if flavor defects are to be eliminated. Butter makers must use their influence among patrons to this end. Poor off flavor butter is likely to result unless the butter maker exerts every effort toward the use of good methods in handling, frequent deliveries, early delivery, cooling cream, and keeping cream covered in transit. Over 50 per cent of the entries were criticized to a more or less degree for old bad cream flavors.

There were several cubes of highly salted and gritty butter. It is often necessary to salt high when working with poor, high acid cream, but even then there must be a limit. One maker defends his high salt content with the statement that his market offers no complaint. It is true that there are markets which call for highly salted butter, and that the creamery must supply this demand. Still, very few customers are pleased by being supplied with gritty butter. Where it is desired to incorporate a large amount of salt, the wet salting method is advisable, as this tends to reduce salt defects.

The few defects under body seem to be closely associated with temperatures employed in washing. One method blank reports the churning temperature as 52 degrees, the buttermilk as 63 degrees, and the wash water as 57 degrees. With such variations as these, there are likely to be criticisms under body. What the consumer asks for is a butter which will spread well and which is neither too firm or too brittle, nor too soft and greasy.

Most contestants are to be congratulated on the appearance of their package. Although few butter makers have the time to prepare finely finished boxes, still a clean, neat cube is expected. There can be no excuse for anything else. Irregular lines detract very much from the good appearance of a cube.

One or two butter makers have expressed the desire of having their butter returned to them after scoring has taken place, in order that they may detect for themselves any unfavorable criticisms. Such requests as this will be granted, and the later examination by the maker will permit not only the comparison of his score with that of the official judge, but also will enable him to learn of the keeping quality of his butter. The contest is conducted not merely for the prizes which are to be awarded, but for better butter, and anything in the interest of this will work a benefit upon the butter makers of the state who participate.

THE GREATEST CHEESE.

The National Dairy Show is going to have another mammoth cheese on exhibition at the coming show to be held in Chicago, at the International Live Stock Amphitheater, October 26 to November 4, 1911. This time it is going to be the "greatest ever." The cheese exhibited at the last dairy show weighed over 4,000 pounds, and was the largest cheddar cheese ever made. This year's cheese will weigh over 10,000 pounds, and will take sixty-five tons of milk and cream from 6,500 cows, milked by 1,350 men. Eighteen expert cheese makers and twenty-five assistants will be employed in the construction of the cheese, which will be transported to Chicago in a specially constructed refrigerator occupying an entire flat car.

The entry comes from Mr. N. Simon, of Wisconsin, who also made the big cheese last year. It is not built alone for exhibition purposes, but will be of the finest commercial quality. The world's greatest cheese will undoubtedly attract widespread attention, and every means will be adopted by the officials of the National Dairy Show for exhibiting it in the most attractive manner.

A silo that will hold 100 tons, which is a good silo for an ordinary farm, can be erected at a cost not far from $300. Interest on $300 is a small consideration when it enables one to keep well all of his live stock, or when the lack of such a structure means a reduction in the live stock kept, or at least a reduction in income from the stock. There are many farms, of course, on which it is not advisable to build silos at present; but any ordinary farm, on which enough live stock is kept to maintain its productivity, affords a condition under which the proposition to erect a silo should at least receive careful consideration.—A. D. Wilson, Supt. Extension Division, Minn. College of Agriculture.

Cream Separators, all sizes and prices. O. J. Weber Co., 225-227-229-231 East Sixth Street, Los Angeles.

Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 225-227-229-231 East Sixth Street, Los Angeles.

FORM COW TESTING ASSOCIATIONS.

Leroy Anderson, of the College of Agriculture, University of California, has been appointed to look after the cow testing association work in this state by Mr. Helmar Rabild, who is in charge of dairy farming investigations of the United States Department of Agriculture. Mr. Rabild writes that he desires Professor Anderson to assume entire charge of the work in California. There are a few cow testing associations in the state and it is hoped that others may soon be organized in dairy sections where there are enough cows to warrant paying the services of a man to do the testing. The associations are growing in number and importance in the dairy sections of the eastern states. Dairymen, who are members of such associations, are almost unanimous in their approval of the system and in the uniformly valuable results which they obtain in the way of information about their cows. If any dairymen or farmers clubs desire to form a testing association they ought to correspond with Professor Anderson, who will be glad to send them literature describing the associations, and he will visit them personally if it is possible for him to do so.

MILCH GOATS.

Mr. Fred Hansen, of Carpinteria, writes regarding the milch goat situation, and refers to his own flock. He says he has a fine bunch, which he began gathering together some three years ago. At that time he had four good does and an imported buck, and has raised over forty goats from that start. He thinks "the Saanen better than any other breed, and especially like their appearance. We are milking some twenty of them this year, having had more than we can handle."

"We have had trouble in shipping milch goats long distances. They will not go without milking, or, if they do, are liable to go dry. We find it better to ship the goats or young kids three or four in a crate. This is cheaper, and the youngsters are less liable to be affected with homesickness."

"We find them most satisfactory in clearing brush land. We bought ten acres of such land, and they have cleaned it up for us. Fenced in a small patch at first, and later moved the fence as needed. Bean straw makes an excellent addition to their fresh forage, and we have always found them very easily kept."

A dairyman of experience says it is not always necessary to use the trocar in cases of bloat in cattle. His advice is to use a fourth to a third of a teacupful of kerosene in an equal amount of water in a long, heavy-necked drenching bottle. After drenching the animal, fasten a smooth stick two inches in diameter in the mouth so it cannot avoid belching and the consequent escape of the gas. If the case is well advanced when discovered, and water is not convenient, do not waste time getting it, but give the oil straight—it will do no harm. If relief does not come in an hour or so, repeat the dose.

The hog is such a free eater and rapid grower that the mistake of feeding him too heavily is often made. This is of course a double mistake, inasmuch as it arrests the best development of the hog and results in a loss of feed. There is absolutely no use in crowding more feed into the willing hog than he can digest and assimilate. This means waste of feed. The object in good hog feeding is not to get the hog to "work up" a large amount of corn and other feeds, but to make the largest gains on such feeds as he may eat and continue to keep his appetite.

The ideal udder should lie evenly balanced in front and behind, should be covered with soft velvety hair, be free of fleshiness and blemishes, and be very pliable and soft, when not full of milk, it should be large enough to allow of growth of cells necessary in the manufacture of milk, and should extend well back between the thighs. The teats should be shapely, of good size and evenly placed.

You cannot afford to breed good cows to a scrub bull. Heifer calves of good breeding will determine your future success in the dairy business. If you have more good heifers than you need for your own herd you can easily dispose of them for good money to others.

Record keeping tends to increase the milk production of the herd by the elimination process.

The proper way to prevent odors and flavors is to feed pure and wholesome feed, give the cow nothing but pure water from deep wells, see that the barn is clean and the ventilation perfect, keep the utensils clean and weed out all the diseased animals from the herd.

Make the acre the unit of measures in considering the dairy receipts. Then try to make each acre produce the largest possible returns. When this is attempted, the dairyman will find himself enriching his soil instead of robbing it.

The ration for the dairy cow should be bulky, well balanced, palatable, digestible and economical.

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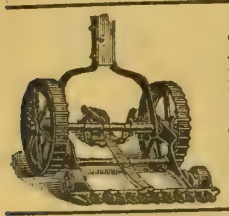

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General Agriculture

MARKETING THE SUGAR BEET.

By R. L. Adams.

A constant supply of raw material is one of the essentials of a successful campaign for a beet sugar mill. The cost of labor is high and the operating expense is great. Failure to secure beets enough day by day to keep the mill running steadily results in a heavy financial loss as the expense of running at half capacity is way out of proportion to the amount of beets run through. In order to secure the necessary beets the mill asks that contracts for the crop be signed early in the season—even before the seed is sown. This method works out to the benefit of both mill and grower. The latter is assured of his market and price from the very start. He need not figure on a fluctuating market, for he can tell pretty accurately what his expenses will be and from this and his probable profits can deduce his profits.

The terms of the contract give the grower the privilege of securing seed through the company. As this seed is purchased by the mill in large quantities the grower receives the benefit of a cheaper price for the seed, cheaper freight rates, tested seed, and redress in case of legitimate complaint. With best seed the inherent characteristics which are bred into the seed to a great extent determine its value in the field, although of course local environment is still more important. Only through systematic organization and careful inquiry can the exact status of any seed be determined. The determination of the history and character of the seed is in itself a matter requiring too much care and attention for the average grower to follow up.

The agricultural force of a sugar mill is intimately concerned with the future of all sugar beets grown, and the services of an experienced field superintendent and his corps of able assistants is constantly at the command of the grower, to aid him in bringing his crop to a successful harvest. Advice as to the best methods to pursue in growing the beets, and in securing help to handle the crop, and demonstration of ways to control insects, weeds and plant diseases, are but a suggestion of the help which the mill agriculturist stands ready to give at a mere hint of need on the part of a grower.

And should financial assistance be needed to carry the crop, the sugar beet will be considered an excellent asset and local banks, or even the sugar company itself stands ready to lend financial aid.

The mill asks a contract for itself in order to be assured of a sufficient supply of beets to insure a profitable run. It also needs an approximate idea of the expected tonnage in order to purchase the right amount of supplies for the campaign, something which must be done in advance of the run, and to estimate and plan for the necessary amount of labor to handle the crop at the mill.

It is therefore advantageous to both parties to sign the contract, which in itself, is a simple instrument designed for the protection of both parties.

In drawing contracts the basis of payment is usually of most interest to the grower. The terms of contracts vary from one mill to another, but all consist of one of two kinds—the purchase of the beets on a flat tonnage basis, or else on a sliding scale base on the sugar content of the beets. Some mills offer a choice of the two ways at the option of the grower. In offering a certain kind of contract the idea of a bonus feature is carried with it. That is, the mill offers the growers the contract which will produce the results desired at the mill. If more beets are wanted a flat rate based on tonnage of beets delivered is offered. If the quantity of the receipts is satisfactory, but the quality poor, a contract is drawn up which places a premium upon rich beets. Should an improvement be sought along the lines of both greater quantity of beets and a higher percent of sugar, a choice of contracts is offered. In each case, however, the contract carries with it a bonus by offering an advance price in order to encourage greater efforts along the desired lines. For instance, some mills offer $4.00 per ton for beets testing 12 per cent with a 33 1-3 cent increase for every additional per cent of sugar. Or they offer a choice to the grower of this schedule or one of a flat rate of say $4.50 per ton based on the amount delivered.

It will pay every grower well to inquire into the wishes of the company in this matter and into the capacity of his land for raising beets. It is wisdom to raise beets in accordance with the company's needs for what they want most is what they stand in greatest need of, and consequently are willing to pay more for. Taking the above rates, for instance. If a grower's land will produce a maximum crop of 12 tons of 18 per cent beets or 16 tons of 12 per cent beets, limits within easy reach of many growers depending of course on the character of the land, he should study the pay schedule well in order to determine in what way he will receive the greatest returns.

Figured on a percentage basis he will receive: $72 per acre for his 10 tons of 18 per cent beets; $64 per acre for his 16 tons of 12 per cent beets.

Figuring on his tonnage rates he will receive: $50 for his 10-ton crop of 18 per cent beets; $80 for his 15-ton crop of 12 per cent beets.

Under the first schedule of payment it will therefore pay him best to raise the smaller but richer crop; while the reverse is true when figuring on a tonnage basis.

The number of examples might be multiplied indefinitely, but this one will serve to point the moral, and show the need for giving careful study to the subject. Taken in connection with the character of the land and the cost of labor, much headway can be made in getting the greatest returns from the land. Moist, heavy, rich land will grow heavy beets relatively low in sugar; while the sandier class of lands tend to produce small beets rich in sugar. When the cost of labor is high the item of handling a small rich crop will usually offset the greater financial returns secured from the heavier crops. This is a variable factor and probably is not alike in any two sections. The working out of crop receipts, expenses and profits is therefore an individual matter and can only be decided by each grower for himself. It is human nature to want to profit most for the labor involved and the suggestion is therefore made that careful inquiry be directed towards determining the best paying contract. If tonnage is wanted by the mill, select the heaviest, best producing land. If it is quality, figure on tonnage, cost and receipts in order to determine the beet of a sugar content most profitable. If a choice is offered spend plenty of time on working out the method of payment which will most profitably reward you for your labors.

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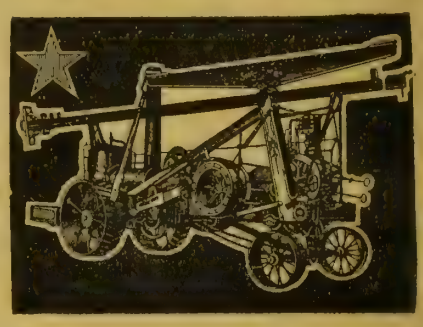

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Irrigation and Forestry

KILL CHIPMUNKS.

Commenting on a recent Bulletin, Mr. E. F. Adams, of the San Francisco Chronicle, says:

"A circular of the Biological Survey says that one of the most serious problems connected with the reforestation of treeless areas within the national forests is the protection of newly planted seeds from the attacks of mice, chipmunks, ground squirrels and other rodents whose depredations collectively continue the year through. The extent of this damage may be understood by the results of a reforesting experiment in the Black Hills by the forest service, in which from 30 to 70 per cent of the seed was destroyed by chipmunks and mice within six days after planting. In order to get an idea of the abundance of these rodents, exhaustive trapping on a half acre containing 2,000 seed spots was undertaken. They secured three chipmunks and eleven white-footed mice, which in three days had pilfered 70 per cent of the seed. One of the chipmunks was seen to visit thirty-eight seed spots in four minutes. It will be readily perceived that the destruction of seed on such a scale threatens the practicability of reforestation. Annoyed in this way, instead of proceeding as ordinary mortals would proceed to kill off the pests, the 'scientists' of the forest service flunked and called in another full-fledged 'scientific service'—the Biological Survey—which proceeded to set traps, put out poisoned grain and go hunting with shotguns. Scientists are as particular about 'jurisdiction' as labor unions. It would be bad form for tree planters to hunt chipmunks. If it is thought necessary to maintain a scientific department for the extermination of small rodents, the chances are that the cheapest and most effective plan would be to let the contract to the nearest tribe of Indians. They probably would not issue any bulletins, but they would kill the chipmunks. It is not best to run 'science' into the ground, nor does it pay to maintain a costly department in Washington to oversee the killing of chipmunks in Idaho. The circular gives the usual formula for preparing poisoned grain, says that small steel traps carefully concealed are the best traps for catching these rodents, states that bisulphide of carbon is the best chemical for destroying burrowing animals, and gives the following suggestions about distributing the poisoned grain:

"'Ordinarily, in distributing poisoned wheat, about twenty kernels should be dropped every three or four feet along parallel lines five yards apart, an extra quantity being left under logs and shelving boulders. At this rate a bushel of wheat is sufficient for about forty acres. In certain dry regions, however, where vegetation and the mammals subsisting upon it are mainly concentrated on favorable slopes and along streams, waste of bait may be avoided by putting out in larger or smaller quantities according to the varying numbers of the pests. Where they are scarce, it need be put only under logs and stones and in similar retreats. The particular kinds of rodents likely to do mischief and the way they are distributed in any given locality may be determined by careful observations and a little preliminary trapping.

"'Poisoned bait may be protected from rain and guarded from birds or poultry by placing it under pieces of bark or little piles of stones. Such shelters are favorite haunts of small rodents.

"'Mice and chipmunks are more easily poisoned in spring, when food is scarce, than when seeds and fruits are ripe and insects plentiful. It is advisable, therefore, to distribute poison early in the season, regardless of the time of planting seed. When seeding is to be done in summer or autumn, the rodents should be destroyed over a somewhat larger area than is designed to be seeded, in order to prevent invasion from surrounding territory.

"'While poisoned grain may be distributed with fair speed by hand, it can be done more expeditiously by using a sack. This sack, which is made of denim or other strong cloth, has a shoulder strap and a narrow wooden bottom fitted with a simple dropping device. By alternately pulling and pushing the sliding measure the operator can drop the grain without stopping.'"

SUBIRRIGATION.

We recently had inquiry from Arizona as to subirrigation in California. Personally we did not know of any successful trial of subirrigation for any length of time. We wrote to Mr. Adams, in charge of the government investigations in irrigation at Berkeley, and to his assistant, Mr. C. E. Tait, in charge of investigations at Pomona. Neither are aware of any pronounced successes with this system, which in theory has always appealed to every irrigator, and in practice has ultimately resulted in failure. The inquiry referred especially to the "asbestine" system, as to what it was and how it worked. We have been unable to learn of any such system.

Subirrigation of Onions.

Mr. Tait referred to a subirrigation system in vogue for onions in the Willamette Valley of Oregon. It consists of a channel of two 2x6 planks on edge, six inches apart, and twenty-two inches under the surface. The top is covered with shakes running crosswise, lapping over each other so as to make a small opening, permitting the water to escape when the channel is filled. The channels are placed sixteen inches apart, and presumably the rows of onions are planted about the same distance apart.

One-inch boards were tried for the sides of this underground pipe, but were too thin. The onions being an annual crop, the roots do not get into the channel or conduit, and the system has been described as working fairly successfully.

Plan Tried at Pomona.

Another plan which was tried near Pomona was much more expensive to install. To prevent roots from entering openings of perforated pipe, the water was conducted underneath the orchard in regular screw pipe. At intervals a tee was located, and in this tee was screwed an upright long enough to stand above the surface of the ground, and slots were sawn in the lower or screw end. When the pipe was screwed into the tee these slots were closed, and the water could not escape, but at time of irrigation the attendant applied his wrench and made a certain number of turns which he knew would bring the slits in the lower end of the pipe out of the tee, so the water would escape. On finishing irrigation the pipe was again screwed down to prevent roots entering. One tee was placed at each row.

This system was installed fifteen years ago, but the size of the openings was not sufficient, and the expense of increasing the number, and the objection of the pipes projecting through the ground and hindering cultivation, prevented the extension of the system. Regarding other subirrigation schemes Mr. Tait writes:

Texas Experimenting.

"A pipe for subirrigation is being manufactured at Austin, Texas, and I understand that it is looked upon with favor in the Gulf Coast region, but I have not heard that it has actually been tried. It is a new thing, and will, I suppose, be tested this season, so that in a few months we will be able to learn something about its service. This pipe is described as a concrete tile in which the upper half consists of large pebbles held together by a thin coating of cement. The pores in the pipe are said to give sufficient opening for the water to pass into the soil, and it is claimed that the course of the openings is so tortuous that roots cannot find their way to the inside of the pipe. Another form of the same pipe consists of solid pipe with holes either in the top or bottom, filled with plugs of porous material. Personally I would want to see the pipe tried for a few seasons before being satisfied that roots would not enter

(Continued on Page 143.)

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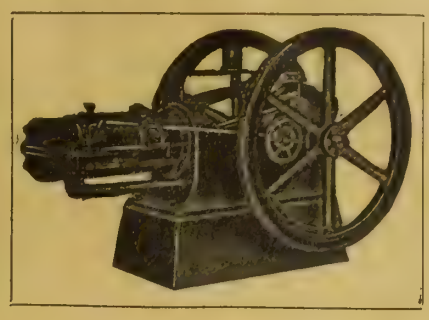

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ARE WE TO BE HANDED A LEMON?

With the state of New York naming forty-five members of the electoral college and California approximately one-fourth that number, it goes without saying that the shrewd politician will curry favor with the New York importers rather than with California lemon producers, and unfortunately, protection of the various industries of this country has more to do with protecting politics than with actual protection of producers. If politics is responsible for the situation which confronts lemon growers, it has been shrewdly brought about at Washington. Lemon growers and their agents have been resting easy, not expecting this matter to be brought up for some time, but the bolt dropped from a clear sky last week, and whether it caught California representatives and senators napping or not, a situation was created which calls for strenuous effort on the part of those who have invested millions and now see the possibility of all those millions being wiped out of existence. These millions are not in the hands of a trust or of people of great wealth, as is charged by the importers, but largely in the hands of homemakers who have come to this state to engage in fruit culture under our favorable conditions. It is unthinkable that these people should be made to suffer, but the strong fight being put up by the importers and their friends calls for immediate and strenuous action to preserve the industry and secure for our state the investment of still further millions of dollars and energy of thousands of fruit growers.

The industry has been slowly increased until this year our greatest production of lemons has been reached. At this time the shipments since November 1st, 1910, are somewhat less than 6000 cars. The increase has not been caused by any exorbitant prices received. It must be admitted that during the recent hot spell the shortage was so great, with but few foreigns coming in, and the demand so keen, that prices did go above normal and growers received much of the benefit, but that condition would have obtained with any industry and was not the result of protection. Taken the year through, we believe the statement which has been made that cheaper lemons will be given to the consumer under protection than under the destruction of the industry and allowing the importers to control it, is true.

It goes without saying that with labor in Italy and the Islands of the Mediterranean practically one-third that in California and transportation to Atlantic seaboard points practically one-fourth what Californians have to pay, Mediterranean produced lemons would have such an advantage over the California product that at least two-thirds of this country's markets could not be reached by California lemons. If this did not result in the absolute wiping out of the lemon industry, it would so cripple it that before many years the Mediterranean producers would have to be looked to for practically all the lemons this country should consume. When that moment arrives, Easterners may look to the time when California lemons were given a cent and a half protection and were sold cheaper than the inferior Mediterranean product.

Not only every lemon grower, but every well-wisher of California's future sholud write to his congressman and senators presenting these facts and urging a most strenuous effort to offset the claims of the importers who are backed by an immense lobby fund secured from every box of lemons imported into the United States.

GREAT FIRE DAMAGE.

Whether the damage to the lumber and fruit interests of Southern California from the fires which have raged over the Sierra Madre in San Bernardino County has reached $8,000,000, as estimated by some, or $15,000,000, as estimated by others, it is such that if it can ever be repaired it will require years. Watersheds covered deep with leaf mold and shaded by dense growth have become barren, covered only with ashes, which will permit the first rains to carry away what little soil covers the rocks. On many of the burned over sections the Tri-Counties Reforestation Commitee, the county, the state and even the nation, have joined in extensive planting. This will all have to be done over and with less probability of favorable results because of the barren soil conditions which this fire will create.

The efforts to control the flames have cost at least one life, and much heroism has been shown. There seems to be a diversity of opinion as to the judgment of the leaders in the fire fighting. Hundreds of men have been at the command of Forest Supervisor Charlton and his helpers, and the bills to be presented to the government will doubtless aggregate a large sum. Many feel that Mr. Charlton's direction of the fighting forces has not shown the judgment which should be shown by one in his position. As to this, we cannot say, and we know that under such fearful loss those interested are liable to judge unjustly, but if the daily press of the southern part of the state reports correctly the expression of officials in charge, they have been unduly hopeful. When the fires had already done fearful damage it was reported in the papers that Supervisor Charlton and others spoke of it as a very small matter. If this is the case, those in charge have not appreciated the magnitude of the situation, and if not, of course have not used proper energy to sooner subdue the fire.

After stating that it is easy to sit in an office and criticize the fighters on the line, the San Bernardino Sun says:

"Without qualification or limitation of any kind, it has been an absolute, complete, inexcusable and indefensible failure, that calls for drastic action, although that will not restore the magnificent trees that have been hundreds of years in maturing, nor bring back the forest cover of the hills, whose bare and denuded sides will send sweeping floods through this city and valley next winter and in succeeding winters, until nature's kindly hand shall have covered the scar, and a decade or two hence may have begun to undo the harm wrought in these seven days of destruction.

"This criticism is not aimed at the rangers who have gone without sleep and worked night and day under superior but incompetent authority, nor does it reach the laborers who for the pittance of 25 cents an hour have faced heat from the furnace canyons equal to that of the gates of Gehenna itself. But it does apply to the men whom the government has sent here to try to do something, the very rudiments of which they do not know."

The Highway Commission appointed by Governor Johnson to have charge of the $18,000,000 road fund voted last fall, consists of Chas. D. Blaney of Santa Clara, Burton A. Towne of Lodi, and N. D. Darlington of Los Angeles. These men are all declared to be enthusiastic for good roads and thoroughly qualified for the position.

TWENTY-FIVE POUNDS NITRATE OF SODA TO THE TREE.

In the report of Prof. C. B. Lipman's address at the Pomona meeting of the Claremont Club the Cultivator made Prof. Lipman say that Prof. Norton had applied 25 pounds of nitrate of soda each year for four years to some orange trees. Professor Lipman writes that this is an error. He says:

"The statement mentioned attributes to me the responsibility for saying that Prof. Norton has been applying 25 pounds of nitrate of soda to some trees each year for four years. This is manifestly impossible since Prof. Norton has only been in the state a little over three years. I have known such applications made on a citrus grove near Reedley for a period of four years and was further informed by one grower at the soil convention last October that he had made applications of twelve pounds per tree per year for eight years and another also made a similar statement, and both claimed that their trees were not only bearing heavily but were in fine condition. In the case of Prof. Norton's trees, however, the applications were made in one or two seasons, I believe, but cannot say exactly. However, Prof. Norton has told me on one or two occasions that the tree thus treated with nitrate of soda showed no effects from it whatever, which he could notice."

Californians are generally elated at the appointment of Louis R. Glavis, formerly connected with the United States forestry service and one of the factors in the clash with former Secretary Ballinger, as joint secretary of the California Conservation Commission and the California Conservation Board of Control. It is hinted that the salary has been fixed at $5000 per year. These commissions have been formed under the act of the last state legislature. The Board of Control will have charge of all water power filings to be made in the state.

Forester Homans reports that during 1910 there were 738 brush, grass and forest fires in the state. This is a material increase over the preceding year. The fires were of three classes: small, put out by one man, fires covering ten acres, and others causing great loss and trouble. The acreage covered by these fires was 654. Standing timber valued at nearly $1,000,000 went up in smoke. The one fire near San Bernardino this year will cause greater loss than all of last year's fires in the state.

The Los Angeles County Chamber of Commerce proposes to make a display at the coming state fair which will pull down those 600 plunks offered for the best county exhibit. To that end the fruit growers and farmers of the county are asked to send in fine specimens of fruits, pumpkins, etc. Secretary Wiggins is taking a personal interest in the matter and hopes the farmers will respond liberally.

A subscriber at Los Gatos calls attention to an error on the cover page of the last issue of the Cultivator in which we give credit for the location of "Big Bridge" as near Palo Alto. The bridge is really located in Santa Clara County, but a score of miles from Palo Alto, and is in the town of Los Gatos.

Stephen Strong is fully installed in the work of quarantine officer at the ports of Los Angeles and San Diego. Several vessels have been inspected and some fruit destroyed because of possible infestation. The San Diego office, while under the direction of Mr. Strong, is in charge of Mr. Jeffrey Junior.

Agricultural News Notes of the Pacific Coast

Northern California

Bartlett pears have commanded excellent prices.

Artesian water has been found at Germantown, Glenn County.

Yuba County will require the help of 2000 people to pick its hop crop.

Healdsburg peach growers have been selling good grade peaches at 10 cents.

Marysville irrigators are planning a tunnel to secure more efficient intake of water.

One Lodi grape grower has disposed of his crop for a lump sum of $100 per acre.

The sugar factory at Hamilton City anticipates a longer campaign than ever before.

Hop growers are pleased at the outlook, the holdover crop being practically all disposed of.

Grape growers of the Sacramento Valley have formed the Grape Growers' Association of California.

Fruit evaporators at Sebastopol, Sonoma County, are already forwarding high-grade evaporated apples.

Placerville, Eldorado County, reports an immense crop of Bartlett pears with promise of excellent prices.

The recent warm spell is reported to have done some injury to prunes and grapes near Woodland, Yolo County.

The government experiment station at Laramie, Wyoming, is purchasing pure bred Rambouillet sheep of a Yolo County stock farm.

The Gridley cannery is running full capacity on peaches and plums. A greater number of hands are employed than formerly.

Dredgers are busy constructing new levees around the new reclamation district in Yolo County. 1000 acres will be reclaimed.

One orchard in Sutter County near Yuba City has shipped 500 tons of choice peaches. It is claimed the price will be over $60 per ton.

The Gravenstein apple show at Sebastopol has been deferred one week because of the lateness of the season. It will open Monday morning, August 21st.

A new irrigation scheme has been launched in Butte and Yuba Counties by San Francisco capitalists which will reclaim and irrigate 70,000 acres of fine land.

Stockholders of the newly organized Quincy Creamery Company recently held their first meeting at Quincy, Plumas County. By-laws have been adopted and a lot purchased for the erection of a creamery.

The shortage of fresh deciduous fruits is emphatically shown in the fact that the pre-cooling plant at Roseville has this year handled an average of only about forty cars daily, while last year it handled approximately 200 per day.

It is claimed that the Great Western Power Company will soon begin the work of erecting a chain of three additional power plants, which will represent an investment of $15,000,000 to $20,000,000. They will be located on the north fork of the Feather River and will have a capacity of 500,000 horsepower.

Central California

Fresno County is making a clean-up campaign on ground squirrels.

Reedley plum growers have been elated over returns of over $2.40 per crate.

Reedley, Fresno County, is shipping carlots of melons to Portland and Seattle.

Sunnyvale, Santa Clara County, reports canneries busy on apricots and berries.

Dairymen of Goshen, Tulare County, are planning for a co-operative creamery.

The Dairymen's Protective Association of Dos Palos is building a new creamery.

Fresno made a seeded raisin exhibit at the National Realty Convention held at Denver.

The Pajaro Valley does not anticipate shipping of apples to any extent before September 1st.

Kern County board of supervisors declares the ground squirrel must go and an active campaign is planned.

The cannery at Hanford, Kings County, now employing 500 people, is running principally on Tuscan Clings.

Much talk is being indulged in regarding the construction of a railway from Fresno to tidewater at Monterey.

The San Jose Grange listened to an address by Irrigation Expert Adams of the government service at its last meeting.

The farmers of Soquel Grange have passed resolutions urging the formation of a farmers' mutual insurance company.

A deputy state veterinarian has been destroying several horses at Hanford, Kings County, because of glanders.

Fruit growers at Dinuba, Tulare County, report the crop of Muscats much better than anticipated earlier in the season.

The first shipment of apples for the season from Santa Cruz County was by the San Monte Company of Watsonville about the middle of July. It was of Red Astrachans.

Nineteen two-horse wagonloads and nine four-horse loads of watermelons were lined up in the waiting list before the freight depot at Reedley, Fresno County, one morning last week.

The Pajaro Valley apple orchards now promise a bumper crop of Newtown Pippins, with Bellefleurs under normal. Some predict that the output of Newtowns will be at least 75 per cent greater than last year's.

One peach buyer at Fresno estimates the crop will be very short. Last year's output was 26,000 tons, and he estimates this year's will not exceed 15,600. Of this, the San Joaquin district will produce about 7600 tons.

The orange drop which usually occurs in late June or early July in groves of Tulare County did not occur as early as usual this year, and for a time it was hoped an immense crop would remain on the trees. Within the last few days, however, the drop has been very severe and not more than 75 per cent of a crop is anticipated at this time.

Southern California

The Chino sugar factory started on its first slicing July 31st.

California produced lima beans last year to the value of $4,176,000.

Lima bean growers held their annual meeting at Oxnard last Saturday.

Estimates of the coming orange crop are that it will be exceptionally heavy.

Apricot dryers are playing a waiting game, 14 cents having been freely offered.

Los Angeles county claims a return this year of $5,000,000 from citrus fruits.

Coachella Valley onion planters are getting fields ready for the next season's crop.

Highland, San Bernardino County, has shipped its last car of oranges for the season.

Early grapes from Brawley, Imperial County, commanded $2400 and $3400 per car.

One Escondido apricot grower will clean up about $4500 from forty-five acres this season.

Lemon growers have been greatly concerned over the possible removal of the lemon tariff.

The Escondido Valley Poultry Association will hold its annual show Dec. 6-8 in Escondido.

Smeltzer, Orange County, reports the planting of about 1600 acres of celery. Planting is practically all finished.

The Valencias on the C. C. Chapman ranch at Fullerton are being shipped from a new packing house.

Coachella Valley, Riverside County, has been shipping early grapes which have been averaging $2600 to $3400 a car.

It is reported that 30 tons of water white honey has been contracted for at Fillmore, Ventura County, for 7 cents.

Bean buyers not connected with the Lima Bean Growers' Association are holding off and making no offers for the coming crop.

Victoria Avenue Citrus Association of Riverside will make a material addition to their packing house before the next season opens.

Kenneth McRae maintains that plowsole or hardpan is responsible for citrus tree deterioration and that soil preparation will effect renewal of the tree.

Los Angeles is already planning for the celebration of the bringing of water from Owens Valley, which will be held a year or possibly two years later.

The great forest fire in the mountains north of San Bernardino has finally burned itself out after causing a loss variously estimated at from $8,000,000 to $15,000,000.

The high water stage of the Colorado has passed and the patrol which has been watching the situation in the interests of the Imperial Valley irrigation people has been withdrawn.

A lawsuit covering a period of weeks is drawing to a close in Los Angeles County. It was between the irrigators of the Santa Ana Valley and those of Riverside and San Bernardino Counties.

The Coast

Utah State Fair will open on Monday, October 2nd.

Bellingham, Washington, has the biggest hay crop yet.

Alfalfa seed harvest is in full swing in the fields near Yuma.

Hay producers at Roseburg, Oregon, are selling at $12 per ton.

Much damage was done by summer rains near Globe, Arizona.

Fruit crop at Chehallis, Washington, will be 75 per cent of normal.

The Yakima Valley, Washington, will ship out 4000 cars of hay.

Grand View, Washington, has just shipped out forty cars of potatoes.

The next territorial fair at Phoenix, Arizona, will be held November 6-11.

Shipments of cantaloupes from various Arizona points aggregated about 1200 cars.

Portland, Oregon, will attempt to make a success of the silk industry in a large way.

Toppenish, Washington, has 35,000 acres in alfalfa and will market 200,000 tons this season.

The state veterinarian of Washington is planning to make a tuberculin test on over 400 cows.

The Yakima Valley shipped 140 cars of hops last year which will be increased to 180 this year.

La Conner, Washington, will produce about 1,440,000 bushels of oats this year as compared to 1,800,000 last year.

Apple orchards of Ravalli County, Montana, are carrying a very light crop because of serious injury from late frosts.

The Yuma Valley, Arizona, is producing some of the finest Muscats. It is expected this crop will be one of the money makers of that section.

The hay crop at Grandview, Washington, will be much heavier than last year, the shipments from that section at that time aggregating 550 cars.

South Bend, Washington, has greatly increased its acreage of cranberries during the past year. The section will ship 2000 barrels of berries this season.

The farmers of the Walla Walla Valley, Washington, predict that if Canada accepts the reciprocity plan barley will not continue to be produced in that section.

President Yoakum of the Frisco lines stated before a farmers' congress at College, Texas, that it costs $7,000,000,000 to get the $9,000,000,000 worth of farm products to the consumer.

A convention at Salem, Oregon, passed resolutions urging the governor to call a special session of the legislature to make provision for changing the constitution so as to permit counties to incur indebtedness for good roads.

The Yakima Valley, Washington, estimates that the production of prunes this year will be about eighty cars this year as compared with 125 last year. The Walla Walla Valley will produce about 500 carloads as compared with 550 last year. The Willamette and Payette Valleys about a normal crop.

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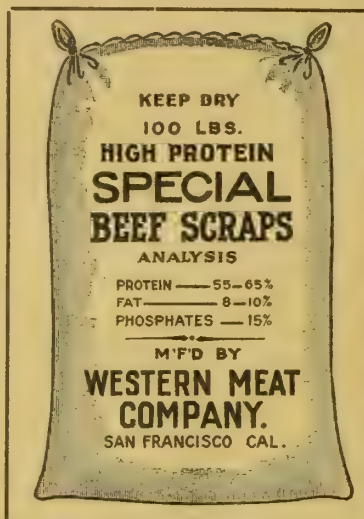

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Profit in the Poultry Yard

Practical poultry people who may have ideas from their experience as to methods of feeding and housing and general care of poultry will convey a favor upon the Cultivator and its circle of readers by sending in concise accounts. Mrs. Basley is always willing to answer queries which with the experience of others should make this a most valuable feature in poultry life on the Coast. Opinions or matters of a personal nature should be omitted, but a concise statement of facts is always valuable.

SANTA CRUZ WINNERS.

The winners at the Santa Cruz show are proud of their awards because of the strong competition. The classes were exceptionally well filled in consideration of the season of the year. It takes some nerve on the part of poultrymen here to place their stock at moulting time on exhibit before those who are most critical, but the show was a good one and the management is pleased with the results. The awards were made by Judge A. H. Currier of Santa Rosa. Winnings were:

AMERICAN CLASS

Rhode Island Reds—Pen—1, Mrs. I. H. Tuttle; 2, Wm. M. Hirsch; 3, Jack Lee. Ck.—1, C. H. Smith; 2, Jack Lee; 3, C. F. Bliven. Ckl.—1, Bliven; 2 and 3, Hirsch. Hen—1, Hirsch; 2, Smith; 3, Lee. Pullets—1, Smith; 2 and 3, Hirsch.

Rose Comb Rhode Island Reds—Ck.—1, Hirsch; 2, Lee. Hen—1 and 2, Hirsch; 3, Lee.

Buff Wyandottes—Pen—1, Wm. C. Parker. Ck.—1, Parker.

White Wyandottes—Pen—1, A. L. Jenkins. Ck.—1, Jenkins. Ckl.—1 and 2, Jenkins. Hen—1 and 2, Jenkins. Pullets—1 and 2, Jenkins.

Barred Plymouth Rocks—Ck.—1, Thos. A. Atkinson. Hen—1, Atkinson.

White Plymouth Rocks—Pen—1, Mrs. D. A. Robertson; 2, Mrs. Robertson; 3, Thos. A. Atkinson. Ck.—1 and 2, Robertson; 3, Mrs. W. E. Vandervort. Ckl.—1, 2 and 3, Robertson. Hen—1 and 2, Robertson; 3, Atkinson. Pullets—1, 2 and 3, Robertson.

Buckeye—Ck. and Ckl.—1, W. W. Hirsch. Hen—1 and 2, Hirsch. Pullets—1 and 2, Hirsch.

ASIATIC CLASS.

Partridge Cochin—Hen—1, Wm. H. MacKay.

Buff Cochin—Pullets—1 and 2, Hirsch.

Light Brahmas—Hen—1, Bennett; 2, Jenkins. Ck. 1, Jenkins.

MEDITERRANEAN CLASS.

Black Minorcas—Ck.—1, David J. Lovell Co.; 2, L. E. McLellan. Ckl.—1, Lovell Co.; Hen—1, Lovell Co.; 2 and 3, C. C. Bonnell.

Blue Andalusians—Ckl. and Pullets—All to C. A. Whipple.

Buff Minorcas—Pen, Ckl. and Pullets—All to Mrs. I. H. Tuttle.

Brown Leghorns—Pullet—All to P. S. Lay. Hens—Same.

Single Comb White Leghorns—Pullet—1 and 2, Bennett. Ckl.—1, N. Duttbernd; 2 and 3, Duttbernd. Pen—1, Arthur Schroeder.

ENGLISH CLASS.

White Orpingtons—Pullets—1, 2 and 3, W. W. Smith. Ckl.—2, E. C. Abraham; 3, W. W. Smith.

Single Comb White Orpingtons—Hen—1, John D. Bennett.

Single Comb Black Orpingtons—Ck. 1, Wm. H. MacKay; 2, Bennett; 3, Harry B. Adair.

Single Comb Buff Orpingtons—Ck., Ckl., Hen, Pullets and Pen—W. S. Sullivan.

FRENCH CLASS.

Ancona—Ck.—2, F. A. Butterworth; 3, L. E. McLellan. Ckl.—1 and 2, Butterworth.

Mottled Ancona—Ck.—1, Willett Ware. Hen—1, Atkinson. Pullet—1 and 2, MacKay.

Houdans—Pen—1, Mrs. Emma F. Reid. Ck.—1, Reid. Ckl.—1, Reid. Hen—1, Reid. Pullet—1 and 2, Reid.

Faverolles—Ck.—1, Jack Lee. Hen—1 and 2, Lee. Pullet—1, Lee.

MISCELLANEOUS.

Silkies—Ck.—Henry A. Hoyt. Ckl.—1, Jack Lee; 2, Hoyt. Hen—1, Hoyt; 2, Lee. Pullet—1, Hoyt.

W. C. Black Polish.—Pen, Ck., Ckl., hen—1, Mrs. L. A. Robertson. Pullet—1 and 2, Robertson.

Guinea Fowl—Ck.—1, W. W. Hirsch. Hen—1 and 2, Hirsch.

Capons—Capon—1, Jack Lee; 2 and 3, P. S. Lay.

GAME CLASS.

Heney Muffs Pit Games—1, H. Harris.

Red Quills Pit Games—1, Harris.

Mt. Eagle Pit Games—1, Harris.

BANTAM CLASS.

Silver Sebright Bantams—Ck.—1, A. E. Eldridge. Ckl.—1, Jack Lee. Hen—1 and 2, Lee; 3, Eldridge. Pullets—1 and 2, Lee.

R. C. White Bantams—Ck.—1, Henry A. Hoyt. Hen—1, Hoyt.

Buff Cochin Bantams—Pen—1, W. W. Hirsch. Ck.—1 and 2, Ben M. Woodhull; 3, H. A. Hoyt. Ckl.—1, Hoyt; 2, Hirsch. Hen—1 and 2, Woodhull; 3, Hoyt. Pullet—1, Hoyt.

White Cochin Bantams.—Ck., Ckl., Hen, Pullet—1, Hoyt.

Partridge Cochin Bantams—Ck., Ckl., Hen, Pullet—1, Hoyt.

Black Cochin Bantams—Ck.—1, Hoyt; 2 and 3, Hirsch. Ckl.—1, Hoyt. Hen—1 and 2, Hirsch; 3, Hoyt. Pullet—1, Hoyt; 2 and 3, Hirsch.

Light Brahma Bantams—Ck.—1, Hoyt; 2, Hirsch. Hen—1, Hoyt; 2, Hirsch.

Golden Sebright Bantams—Ckl., Hen, Pullet—1, Hoyt.

WATER FOWL.

Brown China Geese—Old Goose—1, Wm. W. Hirsch. Old Gander—Hirsch.

White China Geese.—Old Gander—1 and 2, Hirsch. Young gander—1 and 2, Hirsch. Old Goose—1 and 2, Hirsch. Young Goose—1 and 2, Hirsch.

Grey African Geese—Old Gander—1 and 2, Hirsch. Young Gander—1, Hirsch. Old Goose—1 and 2, Hirsch. Young Goose—1 and 2, Hirsch.

Toulouse Geese—Old Gander—1 and 2, Hirsch. Young Gander—1 and 2, Hirsch. Old Goose—1 and 2, Hirsch. Young Goose—1 and 2, Hirsch.

Embden Geese—Old Gander—1, Hirsch. Old Goose—1, Hirsch.

Pekin Ducks—Old Drake—1, 2 and 3, Hirsch. Young Drake—1, 2 and 3, Hirsch. Old Duck—1, 2 and 3, Hirsch. Young Duck—1, 2 and 3, Hirsch.

SIMPLE TREATMENT FOR EARLY SYMPTOMS.

While I hold that it is not profitable to resort to much poultry doctoring, inasmuch as if the fowls are apparently cured, they are unreliable as breeding-stock, yet the giving of prompt treatment in the early stages of diseases is a wise act, says a writer in the Farm World.

Reviewing the more common ailments in the poultry yard we learn these facts:

If in the early stages of bumblefoot, we can spread the corn by painting liberally with tincture of iodine, daily, for a week, it is the thing to do. Bumblefoot is caused by having too high perches or roosting places. In flying down, the fowls' feet often come in contact with some hard, sharp object, which causes a bruise, resulting in the corn.

When hens are allowed to become overfat, a disorder of the oviduct is often the result which causes it to break down behind. It really is no disease—merely a penalty for injudicious feeding. The best remedy known is to kill and eat all specimens. They are not sick birds.

Canker is a digusting ailment, but generally in the start it can be checked by several applications of fine salt rubbed on the sore spots.

Four drops of aconite in a half pint of drinking water, given daily for a week or more, is effective in cases of catarrh.

Chicken-pox can be successfully treated by anointing the head and wattles with carbolated vaseline, after first having bathed well with hot water. A one-grain quinine pill should also be given each night for a week.

A one-grain quinine pill given each night for three nights, or the week, will work wonders in cases of colds.

Cases of costiveness can also be relieved by adding 10 drops of sulphate of magnesia to each pint of drinking water.

For enlarged or sour crop a half teaspoonful of baking soda to a quart of drinking water, added daily for a few days, is excellent. During the time of treatment feed sparingly. Cases of crop bound have been successfully treated by giving the birds all the warm coffee that can be forced into their crops. The dose should be repeated several times.

When a bird is debilitated, it needs something nourishing to build up the waste tissues. There is nothing better than a raw fresh egg every morning until the fowl shows signs of recovery, when it can be changed to a little cooked meat and a little nitrate of iron added to the drinking water. When it is noticed that the bird is mopish, but otherwise seems in good health, this sluggishness can be speedily remedied by giving a family liver pill—just the kind you would take yourself did you feel out of sorts. Repeat each night for three nights in succession. If possible, allow the bird free range over the grass plot during the daytime.

Slight cases of diarrhoea can be greatly benefited by adding a few drops of spirits of camphor to the drinking water. Also add finely ground charcoal to the soft feed.

Nothing better than linseed meal for indigestion. Give a gill in the soft feed to each dozen hens. A teaspoonful of fenugreek added to the mash for every ten fowls is also a good remedy.

A pill made from a half grain of quinine, one grain of sulphate of iron and five grains of phosphate of lime is just the thing for leg weakness. A more simple remedy is ten drops of tincture of nux vomica in a quart of drinking water.

A pill of asafoetida, about the size of a pea, given night and morning, is highly recommended for cases of limberneck.

When the fowl "rattles in the throat" there is evidence that there is some bronchial affection. This "rattling" will be more plainly noticed at night while the fowls are roosting. Give a teaspoonful every other morning of a mixture composed of equal parts of vinegar and water. If this is not effective, treat with a mixture of one part spirits of turpentine with four parts of sweet oil, giving ten drops daily.

There is no more effective remedy for scaly legs than to coat them with gas tar, allowing the preparation to remain on the legs until it wears off. The scales, as a rule, come off with the tar. To make a still more complete job of it, after the tar has worn off, wash the legs with warm water and carbolic soap, and after wiping dry, apply a preparation of one-third carbolic acid to two-thirds glycerine. The glycerine has a tendency to soften and bring out the color on the shanks and toes that may have become harsh and dry.

Catarrh is not roup. It is usually caused by dampness. Exposure to a drenching rain is a good starter for this disease. Roup is a purulent catarrhal affection of the air passages. Dr. Sanborn says it is a filth disease, and not caused by "taking cold." The difference between roup and catarrh is that the latter has a tendency to right itself without treatment, while the former seems to progress to a fatal end.

An English remedy for leg weakness is to give each chicken daily four grains of citrate of iron, or five or six grains of phosphate of lime put in the drinking water and given in pellets of meal. A good supply of nourishing food must also be offered, and it should be of a kind calculated to produce flesh and not fat—worms, ground bone or chopped meat being very acceptable. Plenty of fresh green food should also be given. Let the chickens have healthy exercise.

The man who allows his fowls to roost in trees and on the fences when the fall changes come is the one who complains of having sick hens. He finds some of them sniffling and sneezing, some with matter exuding from their nostrils, some standing around in places where they can find protection from the winds and enjoy the warmth of the sunshine. They will stand there humped up, with pale combs, showing every symptom of sickness.

The beginner often introduces roup to his flock by doing some foolish thing. For instance, he will close up the house tight at night, in winter, when the weather is cold, and allow it to remain closed all the next day. Naturally, a moisture is created, which generates a dampness, and the whole house will feel like a vault. The dampness which fills the house at night, and which usually comes from the fowls' breath, can easily be dispelled in the daytime by opening all the windows wide. Nothing will dispel dampness so quickly as the fresh air, especially if it be dry. It must also be remembered that fresh air never made a fowl sick; and it matters not how cold the outside temperature may be, it will benefit the fowls.

To secure best results, the scalding of poultry is something that must be done with the greatest care. Overscalding makes an unattractive carcass. The water should be just to the boiling point and not actually boiling when the birds are immersed. In doing this, it must not be forgotten, the operator must hold the bird by the legs and head and then lift up and down in the water three or four times, when all the feathers and pin feathers should be removed very cleanly without breaking the skin. All scalded poultry should be "plumped" after picking, by dipping for about two seconds in very hot water—just under the boiling point—and then thrown into cool water of the natural temperature, where it should be allowed to remain from fifteen to twenty minutes.

COLD STORAGE LAW.

Inquiry having come as to the present state law on storage of eggs and butter, we quote as follows from the enactment of the recent legislature:

Section I. For the purpose of this act the words "person, form, company or corporation" shall include wholesalers, retailers, jobbers, and every place where eggs or butter that have been in cold storage for a longer period than three months are sold or offered for sale.

Section II. Every person, firm, company or corporation, who sells or offers for sale any eggs or butter that have been in cold storage for a longer period than three months shall before so doing cause to be stamped, marked or branded upon all sides of each receptacle holding and containing the same in black-faced letters two inches in length the period of time during which the same have been in cold storage.

Section III. That every person, firm, company or corporation selling or offering for sale any cold storage eggs or butter, shall display in a conspicuous place in his or their salesroom, a sign bearing the words "Cold storage eggs or butter sold here" in black-faced letters not less than six inches in length, upon a white ground.

Section IV. Every person, firm, company or corporation, who shall fail to comply with any of the provisions of this act is guilty of a misdemeanor and punishable by imprisonment in the county jail for a term not exceeding six months, or a fine of $250, or both fine and imprisonment.

Section V. The state board of health is hereby authorized and directed to make rules and regulations necessary to carry this act into effect.

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You do not have to buy $100.00 lots—we sell in any quantity from $5.00 worth to a carload. We guarantee you the best possible service. We eliminate the middlemen's profits. Everything you wear, use or eat is placed in your possession for the smallest possible consideration. It is upon this basis that we have built up this tremendous business.

You Can Now Buy Practically Everything You Need at Wholesale Prices—Note These Quotations:

Groceries

Argo Starch. This well-known 5c package; one doz. for	$ .42
Gold Dust—25c size, 3 for	.57
Gold Dust—5c size, 6 for	.23
Beatsol Cleaner—Same as Old Dutch; we recommend it; 3 for	.20
Soapade—5c size, 6 for	.23
Little Star Matches—12 boxes in a package, 6 pkgs. for	.23
Black Diamond Matches—25c carton	.17
One Peck, 1500 parlor Matches	.08
Wilbur's Stock Tonic—25c size	.15
Welsh Grape Juice—Pints, 3 for	.60
Turlock Grape Juice—Pints, 3 for	.45
Mason's A1 Sauce—Made in London, England; the finest Sauce made; 25c size	.18
Tobasco Sauce—Hotter than Yuma; each	.21
Chili Powder, Royal—16-oz. size	.50
Mustard, Ground—Bulk, lb.	.18
Salt—Purest table, 5-lb. sack	.05
Syrup, Golden Glory Drips, 10c size, 6 for	.40
Olive Oil, Royal Pure; gal. cans	2.50
Red Beans, 10-lb. sacks	.55
Lentils, imported German, 5-lb. sack	.40
Flour—Queen Anne, highest quality, in heavy toweling sacks; 50-lb. sack	1.40

Brushes

Bristle Shoe Brush, 25c value	$ .16
Horse Brush, 25c value	.12
Horse Brush, solid back	.19
Hoof Brush, solid back	.14
Palmetto Scrub Brush, 15c value	.08
10-in. Scrub Brush, 15c value	.08
10-in. Stove Brush, 15c value	.07
Hand or Nail Brushes, 2 for	.07
Feather Dusters, 100 full count, 18-in., regular $1 value	.59
Tooth Brush, 10c value	.05
Tooth Brush, 50c value	.29
Whisk Brooms, 15c value	.10
Medium House Broom, 50c value	.33
Light House Broom, 40c value	.29
Hair Brush, imported French bristle, regular $1 value	.70
Hair Brush, black ebony back and handle, long heavy bristles, regular $2.50 value	1.75
Military Brushes, imported French bristles, regular $2.50 value, pair	1.75
Clothes Brush, black ebony back, long heavy bristles, regular $1 value	.75
Daisy Mops, full 16-oz. cotton mop head with handle attached; 25c value	.18

Other Items

Chicken Chili, 10-lb. sack	$ .65
Stayco Roup Cure, 50c size	.35
Stayco Liquid Lice Killer, gal.	.65
Stayco Bed Bug Killer, pint	.35
Stayco Sheep Dip, concentrated; will make 100 gallons of dip; gallon	1.75
Stayco Squirrel Poison, 5-lb. pkg.	.70
Broken Rice for chicks, 100 lbs.	2.40
Stayco Chick Feed; nothing better; 100 lbs.	2.60
Beef Scraps, proteinized, 100 lbs.	3.10
Jelly Tumblers, dozen	.20
Jar Rubbers, 12 dozen	.50
Mason Jars, pints, dozen	.45
Mason Jars, quarts, dozen	.53
Mason Jars, ½ Gal., dozen	.79
Paraffine Wax, lb.	.12
Paper Napkins, plain, 1000 for	.30
Paper Napkins, white Jap crepe, 1000 for	.85
Note Tablets, 10c size, doz.	.85
Letter Tablets, 10c size, doz.	.85
Paper Wax Dishes, ½-lb., 1000 for	1.25
Oval Wood Dishes, ½-lb., 1000 for	1.50
Wash Boards, Laundry Queen	.29

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Bees and Their Care

REQUEENING AN APIARY.

By Albert Dodge, Pasadena.

Located as my apiaries are at the entrance of two canyons, each equally accessible to the foothill orange groves and to the sage in the canyons, I prefer to requeen as early as possible in the spring for three reasons:

1. I can stimulate the early raising of drones from selected queens and thus secure the fertilization of my queens by select drones only.

2. I can secure stronger colonies for the later honey flow, and can have developed my increase into strong colonies in time for them to take advantage of the late flow.

3. The manipulation incident to the requeening operations will, in a measure, control swarming by timing these manipulations so they just precede the early orange honey flow.

How Often to Requeen?

At least once in two years, and oftener when the queen proves undesirable. This means that every year we will want to raise new queens for at least one-half our colonies, and for all our increase. To this should be added at least ten per cent to supply colonies whose new queens are lost in mating or otherwise.

Select drones as well as queens. Be sure that the drones are from as good queens as the brood from which the young queens are reared. Also take care that the drones are not too closely related to the queens. This is avoided when we buy our breeding queen from another apiary. If we are not able to secure the mating of the young queens before drones are hatched in hives whose queens are not satisfactory for the purpose, the zinc excluder should cover the entrances of all such hives until after the young queens are properly mated.

How to Requeen.

From a careful survey of the season, I calculated that the orange honey flow where my bees are located will commence about the first to middle of April this year. I want to so plan my queen rearing that the new queen will hatch out about that time. I therefore have decided upon the following schedule, which I shall undertake to carry out. This schedule can be modified to suit the local conditions at the apiary sought to be requeened:

March 1—I have previously so manipulated that I have drone cells occupied with eggs or brood on this date, in only such hives as have good, pure-blooded queens of satisfactory strain. I did this by stimulating the queens that are to rear the drones to early laying and seeing that drone comb was in center of hive, then gradually taking other comb from the hive and putting drone comb in its place until the hive is filled with drone comb only, if necessary.

March 7—Select 20 per cent of my strongest colonies and place a story of empty combs on each, allowing the queen access to both stories of the hive. If necessary, I shall stimulate these colonies to early brood rearing by a system of light feeding.

March 17—Place queen excluder between the two stories of these hives with about three-fifths the brood above and two-fifths the brood and the queen below the excluder.

March 17 to 27—Gradually remove frames of brood from the breeding queen, substituting therefor empty combs. This will insure fresh young brood and eggs when needed for queen rearing.

March 27—Remove temporarily the brood chamber and the queen of the 20 per cent selected for breeding purposes to another stand, placing the upper story on another bottom board on the old stand. The brood in this new hive is now practically all capped, and the hive is hopelessly queenless. The old bees will return to it, thus making it very strong in bees. Place strips of comb containing eggs or very young larvae from the hive of the breeding queen, between the frames in these queenless colonies, destroying the contents of two or three connecting cells, that the new queen cells thus reared will not be too close together. Place these cells so they face up or down, thereby allowing plenty of room for the building of large queen cells. The bees will accept a large portion of these cells and raise large, beautiful queen cells, because they are now aware that they are queenless, and instinctively proceed to raise another queen.

March 28—Place another story with empty combs on each of the remaining hives in the apiary (and, if needed to secure more queens, place another story on top), in each of which will be placed a quantity of brood, so each of the upper stories of the hive will contain about two times as much brood as will the lower story. Place queen excluder on the hive, leaving the queen in the lower story.

March 29—Return the original hive which was placed on a new stand on March 27th to the old stand, placing the other hive on top with queen excluder between. Queen below and queen cells above. The bees will continue to complete the queen cells they have already accepted.

March 30 or 31—If the bees have not built as many queen cells as desired, now is the time to rear more, by again placing the chambers containing the queen on the new stand, and the upper story on a bottom board on the old stand, as before. Place the queen cells already accepted over an excluder in another colony to be capped. Introduce new eggs or very young larvae from the breeding queen, the same as before, and thus secure an additional supply of queen cells.

April 6, or ten days after placing the eggs or larvae in the breeding hives, these queen cells should be distributed by placing one or more in each super prepared for them by having placed therein frames of brood over an excluder. The cells should be placed in queen-cell protectors to hatch.

To rear my 400 queens I expect to make my hives each three stories high, placing brood in each of the two upper stories on March 28, with queen excluder between the hive and the first super, confining the queen below the excluder. In each of these supers I place one or more queen cells; on

(Continued on Page 138.)

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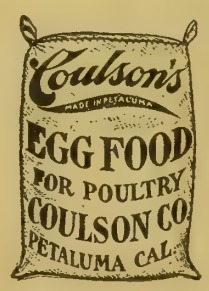
We buy in large quantities, sell on a close margin, and give the poultryman more for his money than he can secure from any other source.



No individual poultryman, or association of poultrymen ever put into food so many elements that are essential to the success of his birds, as are found in COULSON'S EGG FOOD.

You can use our food from one year's end to the other; you can feed a certain kind to little chicks, another kind to laying hens, another kind to the general flock. In each case the particular need will be fully met.

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PETALUMA, CALIFORNIA

Questions and Answers

THE EDITOR AND STAFF

Water Near Surface.

We are situated in the valley of the Colorado river and the land is underlaid with sand at a depth from surface of two to six feet, the sand being filled with water from the river which rises in May, June and July when the river is high to nearly the surface, and on the lower levels to the surface. In the winter months the water is never over four to six feet from surface. The top soil being in some places a heavy adobe soil and in others sandy with quite a little white alkali or salt mixed with it. Are there any crops suitable for it? Would pears do well on this wet land, or apples? How about grapes? Where the water stays four feet from surface we have alfalfa growing this year which is doing remarkably well but will it stand the moisture when the roots get lower? We have been afraid to plant alfalfa where the water is nearer than two feet from surface. We practice irrigation here under the U. S. reclamation act and irrigate by flooding as in the Imperial Valley.—A. H. J., Bard, Imperial County.

If the condition is such as you mention, we believe the best way would be to cut drainage ditches through the place and remove surplus water by pumping. We take it that during the three good growing months the water rises to the surface. Of course alfalfa will not stand for this but a short time. Under such conditions we have known of the drainage ditches with large pumping plant to turn the water back into the river, making the land most productive. Excepting a very few water loving plants, we do not believe such conditions will produce profitable crops. The Government has made experiments on many varieties of rice which might be found to be very profitable under the conditions mentioned by the subscriber. For the fruits mentioned the conditions are not ideal and we would question the advisability of planting unless drainage is provided for. Many vineyards of Fresno County died when the surface water of irrigation ditches came to the surface. We will ask our subscribers who have had similar experience to aid the inquirer.

Keeping Onions.

How can I keep over onions for the winter sale?—Subscriber, Escondido. Also asking the same question, subscriber at Orland, wants to know how to keep onions until Spring or how long will they keep?

The keeping will depend upon weather conditions and upon care in gathering and storing. Be sure that they are thoroughly dried by leaving on the ground after digging, being careful to cover with weeds or lightly with straw to prevent sunburn where the weather is especially warm. Be sure and cut off tops at once. After drying, put in trays or shallow boxes, surely not over 6 inches deep—4 or 5 is better. Provide for perfect circulation of air around and through them. Keep in as cool and airy a place as possible. If brown Australians or a good yellow onion is treated this way it will perhaps keep until the higher prices of December and January. It must be borne in mind that there will be some shrinkage, and one grower has said that if he could secure 1½ cents now he would sell rather than hold for 3 cents in the winter. Another has said, however, that he does not consider the shrinkage would be very serious if a cool storage place could be had.

Black-cap Raspberry Pruning.

Please inform me when is the best time of the year to prune black-cap raspberries.—R. L. C., El Monte.

Of course the first feature in pruning raspberry vines is the removal of the old canes as soon as the fruit is off. The best tool for the work is probably the long pruner used in topping fruit trees. Pinching back of the growing tender shoots is the best method of handling the stalks which will carry next season's fruit. Some begin pinching them back near the ground so as to make them send out more lateral canes. Where the ground is rich and there is plenty of moisture this topping must be followed or long, wide growth is produced with but little fruit bearing vines. Where the cutting out of the old canes is done quickly after the crop removal vines will usually throw a fall crop. These same canes will then bear the following spring.

Questions of a Town Lotter.

What do you think of the Black Langshans and the Buff Orpingtons for a city lot? Would you keep two breeds (separately, of course) and with which of the above? Does it pay to trap-nest hens? And how many nests must be provided and how often must they be visited? How many square feet of roosting space must be provided for a hen? Do hens get sufficient exercise if made to scratch in the dust for grain or should a scratch-pen of straw be provided and how do you make it? How do you thoroughly disinfect a used run?—Subscriber.

The Langshans are a splendid fowl for a city lot. I have kept them myself and speak from experience. They lay a very large egg and of the deepest brown color of shell, a beautiful egg; are good layers and of a splendid disposition. The only possible fault that can be found with them is that the color of their skin is like that of a turkey. The Buff Orpington cannot be beaten as an egg layer. They commence early and keep it up the year round. They are a very fine table fowl and the only fault that any one can find with them is that they want to sit too often, but that tendency is being bred out of them. I would not keep two breeds on a town lot. I think that it pays to have trap nests for any one who wants to know what hens are paying for their keep and what hens to breed from so as to improve the breed. I find that one nest for every three hens is sufficient. I keep three nests in each pen of eight or ten hens. The nests are only visited at feeding time in the morning, at about ten o'clock and at noon when the green food is fed, and again at the evening meal.

About four square feet of roosting space is best. Hens should have a scratch pen of straw, because they do not get exercise enough in only scratching in dust. It is different from hens on the range, there they dig for worms or grubs and the drier the weather the deeper they have to dig, but with grain only scattered and slightly forked under they get it too easily and almost without exercise, whereas with deep straw they have to scratch constantly and for every grain they find they bury two, also they eat a great deal of the straw which is an economy in the food. The best way to disinfect the runs is by planting a crop of wheat in them.—Mrs. A. B.

Correction.

A subscriber at Santa Ana recently gave cure for roup, canker and chickenpox in which she said: "I dipped their heads in a solution of one pint of warm water and a teaspoonful of permanganate of potash, holding under while I counted ten, and it cured all of them in a few days, except one that was too weak to stand when I tackled him." She now writes: "I am sorry that I omitted to say that after making the solution of one teaspoonful of permanganate of potash to one pint of water, I used two tablespoonsful of this to one pint of warm water for dip, as first solution would be too strong. I was only trying to help some one and hope that I haven't hindered any one by the mistake."

A DIAGNOSIS.

When you're feeling all run down,
  When your sight is somewhat blurred,
When your taste is rather brown,
  And you hear no cheering word;
When you get to wondering
  If there's joy behind the skies,
It is likely that the thing
  That you need is exercise.

After you've made up your mind
  That you do not get your due,
When you think the world's inclined
  To bear down too hard on you,
It's a sign that you should rise
  From the chair in which you sit
And through manly exercise
  Gain a new supply of grit.

S. E. Kiser.

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THE STANDARD OF EXCELLENCE
TRADE MARK REG. U.S. PAT. OFF.

Genasco

the Trinidad-Lake-Asphalt Roofing

has the life that only *natural* asphalt can give roofing to lastingly resist all kinds of weather.

The **Kant-leak Kleet** clamps the roof-seams water-tight without cement, and prevents nail-leaks. Ask your dealer for Genasco with Kant-leak Kleets packed in the roll.

The Barber Asphalt Paving Company

Largest producers of asphalt, and largest manufacturers of ready roofing in the world

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Merced County, in the San Joaquin Valley. 3000 acres in small tracts. Rich sandy loam soil, Santa Fe railroad crosses land. Two shipping stations. Surrounded by a highly productive district. Abundant water.

Write today for our descriptive booklet.

Merced Colonies

Send this to us.

Co-operative Land & Trust Company
595 Market St., San Francisco
Please send particulars on Merced Colony No. 2
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On the next *Studebaker* Wagon you pass on the road

Why aren't they split and cracked like the ordinary wagon?

Because the ordinary wagon hub is made from oak, a wood that splits and cracks very easily, while

Studebaker **WAGON**

hubs are made from *Eastern black birch*, a very springy, tough wood, chemically treated, with great weather resisting qualities.

Western birch is used by some manufacturers, but it is even poorer than oak. It is *brashy* and will not stand the strain.

Studebaker hubs cost more than any other hub on the market, but they are stronger and wear longer.

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Established 1886
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COOL WATER IN THE HOT SUN
"NO MR SUN"
YOU CAN'T WARM THE WATER IN THE APPELL WATER BAG"
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SOUTH AFRICAN WATER BAG
THE ADAM APPELL CO. PORTLAND OREGON

APPELL'S South African WATER BAG

Keeps water cool 48 hours or longer, in sun or shade: great boon to prospectors, surveyors, sportsmen, stockmen, farmers, teamsters, anyone exposed to dry or warm weather. Used by U. S. Gov't. Strong, light, easy to carry. Guaranteed

Take no Substitute

This Letter Typifies the Attitude of All Users

Gentlemen: Elkhart, Indiana.

While in Nevada recently I had occasion to drink out of one of your South African Water Bags. Water from the bag certainly tastes good on the desert. We used one of your 2½ gallon bags and *the water remained cool all day, even though the temperature was over 100 in the shade*, and in the morning I found the water sparkling and as cold as ice water. It certainly is a boon to those living in the arid regions.

Yours Sincerely, W. E. WIDER

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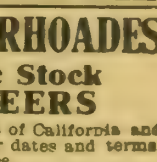

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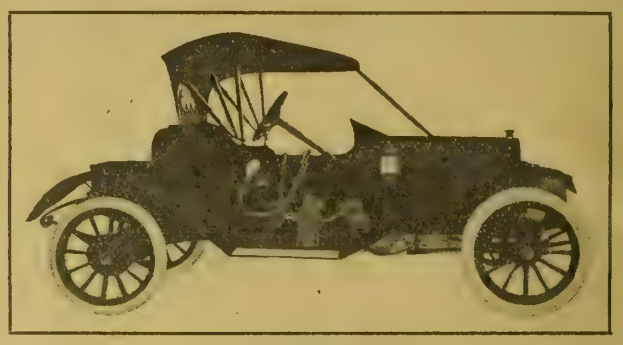
Absolutely Guaranteed

Arnott & Company have taken on the Imperial line as a permanent addition to their other high grade agencies. The high standing of this company attained during the last eighteen years is guarantee that these cars are right in every way. We have eight sample cars on xhibition and solicit the most rigid examination, especially from buyers who are now purchasing their second car and who will recognize the high grade of the "Imperial."

We want an energetic owner-driver agent for this line in each community and can offer a most liberal agency contract that will justify giving us your entire time in selling these cars at a handsome profit. Write today for catalogue and if you are in position to act as agent let us know.



Model 43

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REQUEENING AN APIARY.

(Continued from Page 136.)

April 6 the top super with the bees therein I will then place on a new stand for increase. The queen will hatch and commence laying in the new hive in the regular way. The new colony will be weak at first, but it will soon gain strength, and hatching brood can be given it from other colonies.

The lower super I will place on a bottom board, giving it a cover, thereby making a hive of it, placing it by the side of the old hive, because it is later to be united with the old hive. After this new queen commences to lay, the new hive will be placed on top of the old one with a queen excluder between them, or, if the old queen is removed, it will be substituted for the brood chamber of the old hive, distributing the surplus brood in the supers or with weak colonies.

April 15 to 20 the new queens will probably all be laying. Some queens will probably be lost while mating For the purpose of meeting a contingency like this, 10 per cent surplus queens were hatched. These will probably be in supers which were over old queens we do not care to supercede at this time. They can be drawn upon to replace any lost queens. If at the end of the season we find we still have a surplus of queens, we can make our selection and remove the most undesirable queens, whether old or young.

To avoid swarming which we do not desire, in as much as we provide our increase in another way, we take care that the bees have suitable ventilation and plenty of room in both super and brood chamber. On March 28 we placed some frames with brood above the queen excluder and filled their places with empty combs in the brood chamber. This gives the queen room for brood and as the bees hatch out of the frames above the excluder, it leaves storage room for honey.

Coachella valley, Riverside county, has a thresher at work on alfalfa seed.

DEMAND FOR HONEY.

Secretary A. B. Shaffner of the State Bee Keepers Association writes that he has received a letter from a European firm inquiring for a large quantity of beeswax, also that a London house is making inquiry as to light amber honey in car lots. We doubt not the hot weather that prevailed over the East a few weeks ago burned up all the white clover honey, and imagine that California's honey crop this year will find keen demand at long prices.

APPLE SEEDLINGS IN THE NORTHWEST.

(Continued from Page 123.)

will pay for all the extra trouble and expense of growing seedlings in the West.

Now my experience in the work has taught me that first I must have first-class seed, the best in my experience being the French crab seed, then get it as early as possible. I have mine shipped from New York by express. When it arrives I soak it for a couple of days, then pack in ice and leave till I am ready to plant. I plant in rows thirty inches apart, about twenty seeds to the foot, and about one inch deep, then throw a ridge three or four inches high above them, and when they germinate and are ready to come through the ground, I rake off the ridge to let them come through easily. As soon as they are through the ground, I allow them to make all the growth possible so that I get all my growth early and let them have plenty of time to mature and harden the wood before fall.

I consider the principal things necessary to make a success of the growing of apple and pear seedlings:

1. Proper care in preparing your seed.

2. Proper care in helping them through the ground.

3. Forcing all the growth possible early and letting them mature early.

In conclusion, I would say that while we may have made many failures in the growing of seedlings, still the game is well worth the candle, and I hope to live to see the day that we will be shipping them to the Eastern states to get back some of the money we have sent east for seedlings in the past.

THE MODERN WAY OF DOING THINGS ON THE FARM.

Modern implements and up-to-date business methods are now to the fore in the daily life of the progressive American farmer. Automobiles carry him from farm to farm, and from one section of his farm to another. Traction engines do the heavy farm work, and the business of the farm is carried on in a modern manner, often with the help of sons and daughters who are graduates of present-day business schools.

That old bugaboo of the farmer—the leaky roof—is gone. He realizes that a good tight roof is not only necessary for comfort and healthfulness, but it adds to the value of his property. In the old days, because there was nothing better, the farmer had to "put up with" the shingle roof, which rotted and warped and leaked; or the tin roof, which rusted and had to be painted every so often; and the expensive slate roof, which was apt to crack and blow away, piece by piece. Then the houses were damp, and it was frequently necessary to place buckets around to catch the drippings every time it rained. Outbuildings were rarely ever covered with a water-tight roof, and the animals showed the effects of unsanitary surroundings.

Today the up-to-date farmer uses Genasco—the Trinidad Lake asphalt roofing made by the Barber Asphalt Company, of Philadelphia. This ever-lasting natural waterproofer makes his roof secure against all kinds of weather, and is so easy to apply that any farmer can lay it himself. The attractive booklet, "The Good Roof Guide Book," issued gratuitously by this company, gives much valuable information concerning roofing in general. This kind of help is one illustration of why the modern farmer has been able to progress so far ahead of his ancestors.

320-ACRE HOMESTEAD.

With the new regulations permitting the homesteading of 320 acres instead of 160 in dry farming sections, an impetus has been given to dry farming which could not have been done otherwise. It is admitted that the dry farmer is handicapped when compared with the irrigation farmer, but at the same time the possibilities of home-making under dry farming operations have been proven in many sections of what has heretofore been called the arid West. Where a reasonable rainfall can be depended upon and the farmer is willing to use intelligent dry farming methods, he has almost invariably made money. In fact, we believe intelligent dry farming with scant rainfall is to be preferred to slipshod methods with abundance of moisture. Dry farming puts one on his mettle and is reasonably sure to bring success. Mr. J. G. Bates of 305 Severance Building, Los Angeles, is handling some dry farming propositions with homestead possibilities in Utah. A letter to him will bring information as to what he has to offer. The last issue of the Arrowhead refers to certain grain lands similar to those which Mr. Bates is handling, as follows:

"The high lands, those above 3500 feet altitude, produce all kinds of small grains and hardy vegetables, and excellent crops of apples and small fruits. Dry land farming is being successfully pursued on some of the high lands, and the State Experiment Dry Farm at Enterprise has a yield of 33½ bushels of wheat per acre to its credit. The towns situated on the high lands are Enterprise, Pine Valley, New Harmony, Pinto, and a new settlement named Central."

MECHANICAL IRRIGATION.

The International Harvester Company of America, with offices at Chicago, is mailing a booklet on mechanical irrigation, filled with illustrations of modern irrigating plants as well as those of old Egypt and of early Greece. In addition there is a fund of information on water measurement, friction of water in pipe, irrigation quantity tables, etc. It is well worth the writing for, and we think The Cultivator is mentioned it will be sent without cost.

NORWICH AUTOMATIC EXERCISER AND FEEDER FOR CHICKENS

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THE EARLY WORM.

A father had been lecturing his young hopeful upon the evils of staying out late at night and getting up late in the morning. "You will never amount to anything," he continued, "unless you turn over a new leaf. Remember that the early bird catches the worm."

"How about the worm, father?" inquired the young man. "Wasn't he rather foolish to get up so early?"

"My son," said the father solemnly, "that worm hadn't been to bed all night; he was on his way home."—Ideas.

I COULDN'T STOP.

Years ago, when there were only wooden sidewalks in the city of Winnipeg, Canada, holes were bored in the planks to let the water run through. In the morning twilight a policeman found a man with the tip of his wooden leg in one of these holes and hurriedly walking around it.

"What are ye doin' here?" asked the policeman.

"G'way, offsher," said the man. "Got to get home before ol' lady wakes up."

IN THE SHADOW OF THE NOOSE.

He was an observant little chap. "Pa," he said, "Uncle Joe is going to be married Friday, isn't he?"

"Yes, son. Uncle Joe has only three more days to wait."

The little boy sighed. "The last three days," he said, "they give them everything to eat they ask for, don't they, pa?"—Everybody's.

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When trouble comes; and lo, upon your brow
The thorns shall into roses grow ere while—
The thorns, O friend, the thorns so bitter now
Will cease to be a trial
If you but wear upon your face a smile!

Drink deep of truth and let the fountain play
Within your soul; there is so much delight
To answer you with joy in bough and spray,
So much of beauty in the day and night—
Ne'er can your heart turn gray
If in your breast you give the spirit play!

Shut thou the door on fear and let hope in!
Out of the radiance of the earth and skies
Garments of glory and of grandeur spin
White as the lilied hosts of paradise—
You shut out death and sin
And ope the door to life when hope comes in!

—Edward Wilbur Mason, in National Magazine for July.

IT'S A SECRET.

Marion opened the front door about an inch and beckoned Isabel with a forefinger tingling with mystery.

"Isabel," she whispered in a tone that was easily heard across the street, "come on in. I've got something to show you."

"It's upstairs in my room," she whispered hissingly.

The two clambered up the stairs.

"There don't a soul know a thing about it but me," whispered Marion.

"Oh, ain't it lovely!" gasped Isabel.

They bumped on up the stairs. Then Marion led the way into her own little chamber and closed the door mysteriously.

"Cross your heart, hope you may die, if you ever tell!" She fixed Isabel with a solemn gaze.

"Oh, Marion, there won't never anything make me tell," she declared, clasping her little hands in a transport of joy. Then her face fell. "Of course, unless mother asks me about it," she added. It was a very wistful but dutiful pair of eyes that looked into Marion's.

Marion hesitated. "Well, of course, I mean everybody 'cept your mother, and not her unless she asks you. It ain't anything she'd care about your knowing. It's just that I want to s'prise people."

She dived under the bed and drew out a box. Then she seated herself in her little armchair and Isabel squatted in front of her in rapt admiration.

"You wouldn't ever guess, Is'bel," went on Marion, condescendingly, after a moment, during which Isabel watched her with bated breath, "'cause you're so kind of stupid, so I'll have to tell you.

"Wouldn't you be just s'prised to pieces ,Is'bel, if I should tell you I was writin' a book?"

Isabel nodded, shutting her mouth for a moment as though to swallow this exciting information. "Oh," she said, "a book!" Then she opened her mouth again.

"Yes," said Marion, busily unfolding papers and spreading them out on her lap. "A pink book, or maybe a blue one! I haven't decided which yet. With the picture of a lovely lady on it! And I'm going to read it to you!"

Isabel's sigh was replete with adulation.

"It isn't finished yet," Marion went on, "but I'll read what I've written." She cleared her throat majestically and began:

"'Once upon a time there was a little boy and his mother made him a blue cap to wear.'"

Isabel gave a chirp, delighted to find something familiar in this high pressure, artistic atmosphere. "Just like Red Riding Hood," she squealed.

Marion frowned. "No, it ain't a bit like Red Riding Hood," she said severely. "Red Riding Hood was a girl and she had a red hood, and this is a boy and he has a blue cap, and if you interrupt, Isabel, I won't read you another word."

Isabel dropped her prety head, disheartened by her failure properly to appreciate the intellectual feast.

"Oh," she said, dismally, "I didn't mean to make you mad, Marion."

"I'm not mad," returned Marion, magnanimously. "But when I get to thinking it makes me nervous if people talk to me. Well, I'll read you the rest: 'One day this little boy's mother gave him a little box and it had in it some cookies and some candy and some bananas.' You see, Is'bel, it isn't really a bit like Red Riding Hood, because she had a basket with pats of butter in it. 'Then his mother said to the little boy, "Now you take this box to your Uncle Jack, who lives all by himself in the woods, and you give it to him, and give him my love." So the little boy when he came to the cottage in the woods went up and knocked at the door.'"

"I should think he wouldn't 'a' had to knock at the door when it was his own uncle." In her interest Isabel forgot instructions and, unsolicited, assumed the thankless role of critic, for which she was promptly rebuked by a withering glance.

"'He went up and knocked at the door,'" resumed Marion, disdaining to call attention by words to this lapse on Isabel's part, "'because he was a polite little boy and always knocked at the door, whether people were his own uncle or not. And so he went inside and there were three chairs sitting in the parlor.'"

Isabel, carried away with excitement, forgot all caution and clapped her hands delightedly. "It's the Three Bears!" she cried joyously.

In an instant her happiness was dispelled. Marion very deliberately laid the papers down on her lap, smoothed them out and then returned them to the box.

"You're not very polite," she said in a well modulated voice, "when you tell people their stories are like other stories, when they're not a bit, especially when people have asked you not to talk while they're reading to you; so I guess I won't read to you any more."

After a moment's silence a gentle little sob made her look up in time to see a big tear roll down Isabel's peachy cheek. Marion leaned over gave her a forgiving pat.

"Don't cry, Is'bel," she cooed. "You know you can't help being stupid. And, besides," she added, generously "there isn't any more now, anyway. I didn't have the right kind of paper to finish it on, so I had to quit."—New London Record.

THE DECORATING OF WALLS.

A well-planned room can be as much overdressed as a person, and as the fashion magazines have brought the latter to our attention most favorably by comparing good and bad taste, so we are, too, illustrating the great change produced in the same room by the treating of its wall surfaces in good and bad form.

The artist and decorator have often found that an added bit of color or another line introduced will destroy harmony, rhythm and restfulness of the work. It is often most difficult for the amateur to determine the point at which the decoration should cease. The writer was consulted regarding the framing of a Venetian water scene, for the perplexed owner said: "I've tried hanging the picture in every part of living room and library and it just doesn't appear right in that frame, authough the shop declared it was correctly framed." And it was. A deep 3-inch mahogany frame without any mat brought out the rich blues, greens, warm reds and buffs. The scene could hardly be framed better. What, then, was the trouble? Inquiries developed the fact that the walls of both living room and library were covered with a highly figured wallpaper of a poppy design in green and yellow on a gray blue ground, the poppies all as large as cabbages and the design showing a pronounced wavelike pattern. One's eye jumped from one poppy to another and was forced unwillingly to follow the arrangement of pattern. The Venetian scene and a few other well-chosen pictures were simply spots of indistinct color on the wall, spoiling the movement of the design and hiding a portion of a poppy that we were just dying to see. It is hardly necessary to say that the background and not the framing destroyed the beauty of the harmonious bit of landscape. How could the eye rest quietly upon the picture and enjoy its bit of nature when the background was so disturbing and prominent? A plain green paper formed a good background for the picture and allowed the owner to view his treasure in peace.

But if no pictures are to be hung in a room isn't a figured covering necessary? Will not the wall appear bare? These and other questions will perhaps arise. A figured paper can be used with good effect if the wall spaces are large and uninteresting and no pictures are to be used; but, on the other hand, the monotonous effect of the oft-recurring pattern is far more disagreeable than the plain surface. A highly colored but well designed frieze can be arranged with a plain lower wall or the wall broken with chair rail or panels. If possible avoid a figured paper unless the design and colors used are subdued. Introduce the necessary contrasting colors in hangings and other furnishings rather than in wall decoration. The quiet, refined appearance of the room illustrated has been destroyed by the use of the figured wall covering contrasting strongly with the white finish of the interesting wood features and mantel and destroying the decorative effect that should have been produced by the pictures and the brass articles on mantel shelf and bookcase. One must look closely to discern the candlesticks and the foliage of the landscape picture above the bookcase becomes insignificant against the large figured background. It is not our plan to condemn decoration for wall surfaces, but to point out the evils of the highly ornate surface especially when the same is to be used as a background.

Note the change in the general appearance of the whole room with the walls treated in a plain flat tint. There is a little contrast between tone of wall and woodwork and yet enough variation produced to bring out the architectural features of the room. We have taken as our example a not unusual room so that the difference could be appreciated, although there are other items in this room that could be slightly changed to better appearance. Too much symmetry has been produced by the placing of the brass jars on either end of the mantel and in front of either on floor, a candlestick on either side of picture and small jar beside each, etc. As the brass jars have been placed on the floor for utility, the other items should be arranged or rather grouped accordingly. The large jar on left end of mantel could be dispensed with entirely without destroying the balance of mantel. A heavy cornice in place of the moulding will also improve the appearance greatly. The picture over bookcase could be hung a little higher, as the top of bookcase looks rather crowded and over-burdened. The wall spaces of this room are sufficiently broken and interesting to make the plain wall far more effective than the figured.

It will be found a simple matter to remedy a room that has been unfavorably treated. A soft gray, a light buff or subdued green for walls, using a plain paper or employing a flat wall paint would be a great improvement. The latter permits of frequent washing, this being more desirable than wallpaper that gathers dust and requires renewing. Wall papers can be removed by hot water or paste applications. Professionals prefer the latter, as the paste retains the moisture and loosens the old paste more quickly than several water applications, as the moisture is quickly absorbed. Even though it is found necessary to paper it is wise to remove old covering. Any cracks can be easily filled with plaster of paris and the walls prepared for painting. Then again a silver gray, buff or buff stone and bright sage or maple green can be employed unless a warm tone is required. Flat-tone is recommended as it is easily applied, can be secured in attractive colors and forms such a good background for further decoration. This material should be applied as follows on walls not previously painted: First apply a coat of flat-tone liquid thinned bulk for bulk with flat-tone mixing size. Then apply second coat flat-tone liquid and follow with a last coat from can, allowing sufficient time for drying between coats. If liquid flat-tone is a trifle too heavy for the second and third coats it may be thinned with pure spirits of turpentine.

HOW TO KEEP WELL IN SUMMER.

In the July Woman's Home Companion Dr. Jean Williams, writing on "How to Keep Well in Summer," says, in part:

"In general, to lighten the digestive burden during the summer months, eat sparingly, especially of the heat-producing foods. Add green vegetables and fresh ripe fruits generously to the diet. Avoid underripe, overripe or partially decayed fruits as you would poison, for that is exactly what they are. Strawberries and other small-seeded fruits disagree with many people. In such a case, use only the juice of the fruit.

"Ice water, so commonly and copiously consumed, is very bad for the stomach and sometimes very dangerous. Acute indigestion is often caused by drinking it. As for the ever-present soda fountain, though not all is evil that flows from its faucets, there are few persons whose health will not suffer from indulgence in the heavily sweetened, over-flavored, ice cream nut chocolate mixtures that are sold so much more commonly than the wholesome grape-juice, apple-juice, lemonade, zoolack, matzoon or buttermilk. The last named three not only serve as agreeable, refreshing beverages, but are most valuable foods as well.

"Finally, let me urge everyone to cultivate the holiday spirit. If you can't have a long vacation, take a short one. If you can't leave your work at all, manage to make your work conform in some manner to summer standards. Picnic as much as you can, if you enjoy it. Eat out of doors, if you can do so in comparative privacy. In these respects home keeping women are much more fortunate than their brothers and sisters, husbands and fathers out in the business world because much of their work can be taken out of the stuffy rooms into the air. Fortunately we are all rapidly learning how much of a factor in preserving health this outdoor life may be, and how much it will help us to make our summer not only healthful but happy."

To clean your vinegar cruet, put a teaspoonful of lye in it, fill it full of water, and let it stand a few days. Then rinse thoroughly, and it will look as bright and clean as when new. This is also good for cleaning old jugs.

PRUNES.

A housekeeper says she does not cook prunes. She washes them thoroughly, covers one inch deep with tepid water, sprinkles over them what sugar is desired, and then soaks them from 12 to 24 hours. If the fruit is very dry and hard it may be placed on the warming shelf of the range so as to keep warm while soaking. If a richer syrup is desired the juice is drained off when the fruit is soft, boiled down and then poured over the fruit again. It is claimed that this treatment makes the prunes taste just like fresh fruit. We always soak prunes for several hours before cooking, then simmer slowly with a slice or two of lemon, using the water in which they were soaked for the cooking. There is a great difference between the well-soaked fruit, which has much of its lost moisture restored before cooking, and the tough, insipid, hastily cooked prune which is so often offered, bringing excellent and wholesome fruit into disfavor.

CUSTARDS.

To make custards successfully, cook the soft custards in a double boiler over hot, not boiling, water, and stir constantly. The custards to be baked should be set into a second dish half filled with warm water.

A good formula to use for custards of any sort is the following: One cup of milk, one egg, one tablespoon of sugar and flavoring to taste, added (in case of soft custards) after the custard is cooked, but while it is still hot.

To restore a soft custard which has separated or "curdled," set the dish in cold water and beat with an egg beater until smooth.

A New Book and a Good One

The Story of the Soil

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I must say that I think the book is destined to do more good, stir more thought, encourage more upward effort among the farmers of this country than any other publication that has yet appeared. It was a happy thought making a human story of it.—Ex-Governor W. D. Hoard, Ex-President Board of Regents, University of Wisconsin, Editor of Hoard's Dairyman, Fort Atkinson, Wisconsin.

I enjoyed every word of it. It is fascinating. I doubt if a dozen people in the country would believe that it is possible to write a novel about the soil—these big soil problems handled so ably, so plainly that any farmer can understand. Here is a book that certainly every man in the land should read.—Editor Charles W. Burkett, of American Agriculturist and of Ginn & Company's Country Life Education Series, Boston, Mass.

This book is the greatest work of fiction based on agriculture ever written. The narrative contains a storehouse of information that will be worth millions to the farmers of America. Read this story; it is worth its weight in gold.—Burridge D. Butler, Publisher of the Prairie Farmer, Chicago, Illinois.

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1115-117 No. Broadway LOS ANGELES

San Francisco-Los Angeles Produce Markets

Los Angeles Market

LOS ANGELES, Aug. 9, 1911.

Butter.

Eastern butter is taken from quotations this week. All other grades same quotions as last week. Market firm.

Prices to trade 2½c in advance of the following Produce Exchange quotations:

Extras	25
Firsts	24
Ladies	23
Country	20

Cheese.

Local Anchor	16
Oregon Daisy	16@16½
Northern Fresh	15
Domestic Swiss	18
Imported Swiss	30@32

Eggs and Poultry.

The egg market is in good condition with same quotations as last week.

Paying prices f. o. b. Los Angeles are:

Local ranch, candled	34
Case count buying price	30
Northern and Imperial	28@32
Eastern	25

Dealers pay for live poultry f. o. b.:

Pullets	26
Hens, per lb	13@17
Roosters	8
Broilers	16
Fryers	17
Roasters	19
Turkeys	23@27
Ducks	12
Geese	10
Guinea hens, doz	4.00
Squabs, doz	2.00@2.10

Live Stock.

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs	7¼
Prime steers	6
Heifers	6
Calves, per lb	6½
Sheep, ewes, per head	4.75
Lambs, per head	3.75@4.25
Wethers	5.00@5.50

Potatoes.

Wholesale prices are:

Sweets, yellow, lb	7@8
New potatoes, lugs	85@90
Burbanks, lug	1.45@1.60
Highlands, ctl	2.25@2.50

Onions.

Wholesale quotations:

Australian Red, ctl	1.75
Silverskins, box	40@50
Yellow Danvers, ctl	1.50@1.60
Garlic	6@8

Vegetables.

Wholesale quotations:

Artichokes, northern, doz	75@90
Asparagus, lb	5@7
Beets, doz bunches	20@25
Bell peppers, lb	5@7
Beans, wax	3@4
Green chilis	4@6
Cucumbers, lugs	35
Cabbage, sack	95@1.00
Cauliflower, doz	1.50
Celery, new, crate	2.50@3.00
Carrots, sack	1.00@1.15
Corn, lug	30@40
Egg plant	8
Horseradish, lb	12½
Onions, green, doz bunches	20@25
Kolrabi, doz bunches	40
Leeks, doz	45@50
Lettuce, crate	1.00@1.25
Mushrooms, basket	3.50@4.00
Oyster plant, doz	35@40
Okra	5@6
Peas, lb	4@5
Parsley, doz bunches	20@25
Parsley, doz bunches	25@30
Radishes, doz bunches	15@20
Rhubarb	1.25@1.50
Spinach, doz	20@25
Squash, summer	25@30
Spearmint, doz	25@30
Tomatoes, lug	30@50
Turnips, sack	1.00@1.25
Watercress, doz	25@30

Citrus Fruits.

Valencias	2.75@3.50
Grapefruit	1.75@3.00
Lemons	2.00@5.00
Limes, hundred	1.25

Fresh Fruits.

Wholesale prices on the market are:

Apricots, crate	1.25@1.50
Apples, W. Astrachan	2.25
Apples, Gravenstein	1.75@2.25
Apples, Crab, lug	1.25
Bananas	3½@4
Cantaloupes, small	1.00
Cantaloupes, large	1.75@2.00
Currants	8@10
Figs, box	75@95
Grapes, Sweetwaters, crate	1.35
Grapes, Thompson Seedless, lug	1.25
Grapes, Black, crate	1.50
Grapes, Malagas, lug	1.35
Loquats, lb	4@6
Loganberries	6@7
Nectarines, box	1.50@1.75
Peaches, lug	1.25
Pineapples	7@8
Plums, Clymans, lug	1.50
Plums, Satsuma	90@1.50
Plums, Tragedy	1.50
Plums, Burbank	1.35
Plums, Green Gage	1.75
Prunes, Simoni	1.50
Pears, box	2.00@2.50
Dewberries	4@5
Blackberries	6@7
Raspberries	7@8
Gooseberries, lb	8@10
Strawberries	3@5
Watermelons, lb	¾@1

Dried Fruits.

Wholesale prices are:

Evaporated Apples, fancy, lb	21
Apricots	14@17
Figs, box	1.85@2.25
Peaches	8@11½
Nectarines	9@10
Pears	12@13
Prunes	11½@13½
Plums	10

Beans Dried.

Wholesale quotations:

Limas	6.75
Black eyes	8.00
Pinks	5.75
Lady Washington	4.00
Small white	3.75@4.00
Garvanzas	4.50
Lentils	6.00@7.00
Mexican Reds	4.75@5.00

Nuts.

Wholesale quotations:

No. 1 soft shell walnuts	18
Almonds, IXL, lb	19@20
Pecans, polished	15@17
Peanuts, Eastern	8
Peanuts, California	6
Pine Nuts	18

Honey.

Wholesale quotations:

Extracted water white	8
Extracted light amber	7
Comb water white	16@17
Light amber	13@14
Beeswax	30

Hay.

Buying prices f. o. b. cars Los Angeles are:

Barley hay	11.00@13.00
Wheat hay	11.50@12.50
Tame oat	14.00@15.00
Alfalfa	12.50

Grain.

Wholesale selling price f. o. b. Los Angeles:

Wheat, new, cental	1.70@1.75
Corn	1.70@1.85
Kaffir	1.95
Millet	3.25
Popcorn	4.75@5.00
Egyptian corn	1.65
White oats	1.80
Seed barley	1.50

Feed Stuff.

Wholesale selling price f. o. b. Los Angeles:

Alfalfa meal	1.15
Cracked corn	1.90
Cracked wheat	1.85
Shorts	1.90
Bran	1.65
Oil cake meal	2.50
Feed meal	1.95
Rolley barley	1.55
Middlings	1.65

San Francisco Market

SAN FRANCISCO, Aug. 8, 1911.

Butter.

Butter is reported as steady with a cent advance over last week's quotations on extras and prime firsts.

Price to trade 2½c in advance of the following Produce Exchange quotations:

California extras, lb	26
Prime firsts	24½
Firsts	23½
Seconds	22

Cheese.

Cal. flats	11@14
Cal. Y. America, fy, new	14@16
Oregon, fancy	14

Eggs and Poultry.

The egg market is very firm and almost daily advances have been made since last quotations were made.

Official quotations of the San Francisco Wholesale Dairy and Produce Exchange are:

Fresh ranch extras	33
Prime firsts	26
Firsts	24
Seconds	19½
Eastern seconds	16
Select pullets	25
Hens, doz	4.00@9.00
Fryers, doz	4.50@5.50
Ducks	4.50@7.00
Broilers	2.00@3.50
Roosters, doz	4.00@9.00
Geese	2.00
Pigeons	1.75@2.25
Squabs	2.00@2.50

Live Stock.

San Francisco prices, gross weight:

Steers	4.00@5.25
Cows and heifers	3.00@4.25
Calves, lb	5@6¾
Hogs	5@7¼
Wethers, No. 1	4@4¼
Milk lambs	5@5¼
Ewes, No. 1	3½@3¾

Potatoes.

Wholesale market quotations:

River whites	50@65
Sweets, lb	5@6

Onions.

Red, new, sack	75@90
Silverskins	80@1.00
Garlic, lb, new	3@4

Vegetables.

Wholesale quotations:

Asparagus, box	1.00@1.75
Beans, string	1@2
Beans, wax	1@2
Limas	3
Bell peppers, box	75@1.00
Carrots	60@75
Cucumbers, box	25@35
Corn, sack	35@1.00
Chili peppers, box	40@65
Celery, crate	1.50@2.50
Egg plant, box	35@50
Cauliflower, doz	75@1.00
Lettuce, crate	75@2.00
Okra, box	50@75
Peas, sack	1.00@1.25
Hubbard squash	1.25
Summer squash, lug	25@35
Tomatoes, lug	35@60
Turnips	60@75

Citrus Fruits.

Valencias	3.25@4.00
Grapefruit	1.50@2.75
Lemons	1.50@4.00
Limes, Mexican	6.50@7.00

Fresh Fruits.

Apricots, crate	75@1.00
Apricots, ton	50.00@60.00
Apples, Gravensteins	80@2.00
Apples, new, green, 20-lb box	50@1.50
Cantaloupes, ponies	60@80
Cantaloupes, standard	60@75
Cantaloupes, Rivers	1.00@1.75
Nutmegs, large, box	50@1.00
Cherries, white, lb	4@5½
Currants	8.00@9.00
Figs, layer	90@1.00
Grapes, black	1.00@1.15
Grapes, Thompson Seed., crate	1.15@1.25
Grapes, Malagas, box	60@85
Grapes, Muscats, crate	1.15
Peaches, box	35@60
Peaches, E. Crawford	50@75
Pears box	1.25@1.75
Plums, Tragedy, box	50@75
Prunes, German, box	1.00@1.25
Loganberries, chest	4.00@6.00
Blackberries, chest	3.00@4.00
Raspberries, chest	5.00@7.00
Strawberries, Banners	5.00@6.00
Longworths	4.00@6.00
Malindas, chest	4.00@5.00
Pineapples, Hawaiian	2.00@3.50
Bananas	1.00@1.50
Watermelons, doz	2.00@4.00

Dried Fruits.

FRUITS—1911 crop, f. o. b., carload lots, per lb.—Apples, 11@12¼c; Apricots, 15¼@18c; Peaches, 10½@11¾c; Prunes, bulk basis, 5½@7c; per lb., 4¾@9½c, with a premium of ½@1c on large sizes; Figs, 5@6c for White; Pears, 11@14¼c.

RAISINS—1911 crop: Seeded, per pkg. —Fancy, No. 16, 8c; Choice, No. 16, 7¾c; Loose Muscatels, in 50-lb. boxes—Standard, 4-crown, 6½@7c; do, 3-crown, 6@6¼c; do, 2-crown, 5½@5¾c. Seedless—Muscatel, 5¼@5½c; Sultanas, 6¼@6½c; Thompsons, 6¾@7c.

Nuts.

Walnuts, No. 1 soft shell	16@16½
Walnuts, No. 1 hard shell	14½
Almonds, '10, N P U	16@16½
Almonds, '10, Nonp	18@18¾
Almonds, '10, I X L	16½@17¼
Pecans	14@17
Chestnuts, California	6@8
Peanuts	5@5½

Beans Dried.

Limas	6.00
Pink	4.80@5.10
Black eyes	6.00@6.35
Small white	3.50@3.70
Large white	3.35@3.40
Kidneys	5.50@5.75
Garbanzos	3.00@3.25
Bayou	3.75@4.00
Horse beans	1.50@2.00
Red Mexicans	5.00@5.25
Cranberry	3.75@4.00

Hops.

Hops, coast, 1910	23@25
Hops, 1911 contracts	23@26
Hops, Oregon, 1911	23@26

Honey.

Water white, comb, '11	15
Dark comb	12½
Extracted white, '11	9@10
Extracted dark	6½
Beeswax, lb	24@30

Hay.

Scott, Magner & Miller say:

Hay arrivals on the San Francisco market during the past week have amounted to 4500 tons, which large amount about equals the arrivals of a week ago. The bulk of these arrivals have moved off fairly well, although a large part had to be taken care of by the large dealers.

In our large hay districts the bulk of the hay is being directed into the storage warehouses, and the fields are being rapidly cleared, and we believe that all will be cleared from the fields earlier this sason than for many years past. During the week there has not been much activity on purchasing account in the country, although a number of sales have been made of small lots.

There has been quite a lot of hay sent forward on vessels during this week for export account; in fact, quite a round shipment was made for the government for use in Honolulu under a contract dating back several months.

The market on alfalfa still continues decidedly inactive as there is not much coming in, and the demand for this article is also very slow. Last season large orders were placed in this market for shipment to the North, but apparently there does not appear to be any opportunity on the present market values of our alfalfa to ship any of it into the Northern markets.

We quote the wholesale prices in round lots on today's market as follows, viz:

Fancy wheat hay	14.50@15.00
No. 1 wheat or wheat & oat	12.50@13.50
No. 2 wheat or wheat & oat	11.00@12.00
Choice tame oat	13.00@13.50
Other tame oat	10.00@12.00
Wild oat	9.00@11.00
Stock hay	5.50@6.50
Alfalfa	9.00@10.50
Straw, bale	45@55

Grain.

Wheat	1.40@1.47½
Barley, fancy	1.37½
Barley, good to choice	1.32½@1.36¼
Oats, white	1.50@1.60
Rye	1.42½@1.47½
Mustard, brown	5½
Alfalfa seed	18
Millet	3@3½
Flaxseed	5@5½
Broom corn seed, ton	25.00@30.00

Feed Stuff.

Alfalfa meal	15.00
Bran, ton	28.50@30.00
Feed cornmeal, ton	37.00@38.00
Cracked corn	38.00@39.00
Rolled barley, ton	28.00@29.50
Rolled oats, ton	29.00@30.00
Middlings	32.50@35.00
Oil cake meal	42.00@43.50
Cocoanut cake, ton	25.50@26.50
Mixed feed, ton	25.00@27.00
Shorts	29.00@31.00

Deciduous Fruit Market

Manager F. B. McKevitt of the California Fruit Distributors reports:

Sacramento, August 5, 1911.

The following gives number of cars of deciduous fruit shipped from all points in California for the week (seven days) ending Friday morning, August 4, 1911:

Peaches—376¼ cars. Peach shipments show a gain of over 100 per cent since last week. They will probably continue in about the same volume for the week to come, after which they will begin to decline. Elberta is the variety most largely going forward at the present time, although there are considerable number of Crawfords and Fosters still moving. Late Crawfords and Susquehannas will soon be in evidence. The bulk of the crop will be moved by the 20th. Peaches now going forward are of fine quality.

Plums—112¾ cars. Already a considerable decline is noticeable in volume of shipments, and this will be greater as time goes on. It is probable that the movement for the coming week will not be more than 75 or 80 cars, after which time there will be very small quantities available. Wickson are now nearly done, German, Sugar, Kelsey, Splendor, Giant, Gros, and a few Grand Dukes constituting the leading varieties.

Pears—349 cars. It is believed that this week marks the heaviest movement of pears for the season. Shipments have already begun to decline slightly in the Sacramento River District and will continue to do so until the close of the season. Not many are going forward from Suisun at the present time, but shipments from that point and from Vacaville will be considerable next week.

Grapes—124¾ cars. A heavy increase is noted in the shipment of this fruit. The principal varieties are Thompson Seedless and Malaga from the Fresno district. A few Rose of Peru, Muscat and Tokay are being forwarded from the Vacaville and Winters district. Tokay shipments will cut no figure for another week, after which time they should be in fairly good supply from the early districts. Grapes are of unusually good quality this season. Mildew has been quite prevalent in practically every section where table grapes are grown. Having been promptly treated it will have but small effect on the crop.

Weather conditions continue very favorable.

Comparative statement of shipments up to July 29:

	1910	1911
Cherries	250½	216¼
Apricots	289¾	214½
Peaches	1110½	528¾
Plums	1290¼	772½
Pears	1320½	517
Grapes*	100¾	26
Apples	57¾	...
	4420	2274½

*A discrepancy in shipment of grapes is noted, owing to the fact that 36 cars, not reported in comparative statement of shipments for the week, are accounted for in the market letter.

Citrus Fruit Market

LOS ANGELES, Aug. 9, 1911.

A slightly easier tone prevails on the orange market owing to continuance of large receipts of local fruits in the Eastern markets. The quality of Valencias is so high, however, that the demand is sufficient to clean up at fair prices all the offerings up to this time. Of course, the easier tone has compelled slightly lower prices, but a better range is maintained than two years ago when a similar large crop of Valencias had to be handled.

The general lemon situation is decidedly easy and the whole market is more or less influenced by the present tariff agitation.

Shipments.

Shipments of oranges to date since November 1st, 1910, 34,890 cars, lemons 5885, total 40,775. To same date last season: Oranges 23,936 cars, lemons 4105, total 28,041.

NEW YORK, Aug. 8.—Eleven cars Valencias sold. Market is steady on fancy grades, lower on ordinary and poor grades. Weather fair.

VALENCIAS—	Avge.
Old Mission, fy, Chapman	$4.75
Old Mission, ch. Chapman	4.40
Golden Eagle, sd, Chapman	3.95
United	3.75
Dulce, sd, Randolph Ft Co.	3.35
Iris, D M Ex	4.75

Cream Separators, all sizes and prices. Guy F. Kelsey & Co., 106 East Eighth St., Los Angeles, Cal.

Violet, D M Ex	4.15
Jasmine, D M Ex	3.70
Planet, S S Ex	3.45
Nonpareil, Covina Ex	3.40
Red C, Covina Ex	3.50
Cougar, Covina Ex	3.00
Red Shield, A C G Ex	3.50
Possum, A C G Ex	3.10
Lincoln, A H Ex	2.85
Red C, Covina Ex	3.35
Cougar, Covina Ex	2.95
Red Globe, Rix Ex, Riverside	3.25
Cal Orange, Riv Ex, Riverside	2.50

BOSTON, Aug. 8.—Eight cars sold. Weather favorable. Market unchanged on oranges, firm on good stock lemons, weak on low grades.

VALENCIAS—	Avge.
Planet, S S, Orange	$3.75
Cougar, Covina Ex	3.60
Pointer, A C G, Azusa	3.70
Peasant, A H Ex	3.55
Glendora Heights, xc, A C G Ex	4.25
Red C, Covina Ex	3.90
Stag, A C G, Azusa	4.55
Kenilworth, A H, Riverside	4.00
Glendora Heights, xf, A C G Ex	4.75
Evolution, A C G, Glendora	3.80
LEMONS—	
Quail, O K Ex	2.45
Blue Jay, O K Ex	1.65
Marguerite, xc, Earl Ft Co	1.65
Coyote, O K Ex	1.85
Quaker Girl, S T, Whitter	4.00

NEW YORK, Aug. 7.—Nineteen and one-half cars Valencias, two grapefruit and one and one-half lemons sold, one grapefruit withdrawn. Market strong on oranges, unchanged on lemons. Fair.

VALENCIAS—	Avge.
Iris, D. M. Ex	$4.60
Violet, D. M. Ex	4.05
Jasmine, D. M. Ex	3.55
Glendora Heights, fy, A. C. G. Ex	4.65
Glendora Heights, ch, A. C. G. Ex	4.25
Evolution, A. C. G. Ex	3.85
Sceptre, S. S. Ex	4.30
Rooster, S. S. Ex	3.85
Pinnacle, O. K. Ex	4.45
Quail, O. K. Ex	4.00
Coyote, O. K. Ex	3.30
Wisteria, S. A. Ex	4.55
Paul Neyron, S. A. Ex	4.20
Fuchsia	3.75
Moose, O. K. Ex	4.40
Prong Horn, O. K. Ex	4.15
Buck, O. K. Ex	3.45
Diamond S, O. K. Ex	2.75
Red C, Covina Ex	3.65
Cougar, Covina Ex	3.50
Blue Globe, Riv. Ex	4.30
Red Globe, Riv. Ex	3.25
Uncle Sam, Riv. Ex	4.00
California Orange, Riv. Ex	3.15
Billiken, Riv. Ex	3.00
Squirrel, A. H. Ex	3.10
Prairie Chicken, A. C. G. Ex	2.45
Nonpareil, Covina Ex	3.65
Teal, Covina Ex	3.40
Uncle Sam, Riv. Ex	3.80
Billiken, Riv. Ex	3.00
Pond Lily, Riv. Ex	2.80
Squirrel, A. H. Ex	3.10
Prairie Chicken, A. C. G. Ex	2.40
Argo	3.65
Dulce, sd, Randolph Ft. Co	3.30
Titus Ranch, fy, San Marino G. P. A.	4.10
Aurora, fy, E. Peycke Co	3.65
Luna, ch, E. Peycke Co	3.25
Laverne Heights, fy, Randolph	3.75
Lighthouse, sd, Randolph	3.15
Corona	4.10
Corona Standards	3.70
Old Mission, fy, Chapman	4.85
Old Mission, ch, Chapman	4.30
Golden Eagle, sd, Chapman	3.90
Euclid, or, Growers' Ft Co	4.35
Uplanders, or, Growers' Ft. Co	4.10
Duquesne, Duquesne Ft. Co	4.45
Ft. Pitt, Duquesne Ft. Co	4.05
GRAPEFRUIT—	
Primrose	$1.60
Squirrel (seedless)	1.70
Prairie Chicken (seedless)	1.20
Hawarden	1.25
Arch	1.10
H. C. A	.90
GRAPEFRUIT—HALVES—	
Blue Globe (Florida)	$1.60
Mahala (seedless)	1.80
Corona	1.60
LEMONS—	
Trail	$3.60
Canyon	2.65
Flower Box	2.70
Diamond S	2.70
Plain Ends	1.80

BOSTON, Aug. 7.—Seven cars sold. Weather favorable. Market doing better on oranges, easier on lemons.

VALENCIAS—	Avge.
Pointer, A. C. G., Glendora	$3.30
Pointer, A. C. G., Charter Oak	3.60
Quail, O. K. Ex	3.60
Homer, Q. C. Corona	4.10
Sceptre, S. S. McPherson	4.40
Stag, A. C. G., Charter Oak	4.55
Hunter, Charter Oak	3.55
Pinnacle, O. K. Ex	4.65
Lotus, O. K. Ex	4.25
Camel, Q. C. Corona	3.80
Planet, S. S. McPherson	3.80
LEMONS—	
Punch, S. T. Colegrove	$2.55
Club, S. T. Colegrove	2.05
GRAPEFRUIT—	
Stag	$ .90
Homer (seedling)	1.00

PHILADELPHIA, Aug. 7.—Three cars Valencias sold, one mixed car and two cars lemons.

VALENCIAS—	Avge.
Red Shield, A. C. G., Azusa	$3.95
Stag, A. C. G., Glendora	4.70
Hunter, A. C. G., Glendora	2.80
Yankee Doodle, A. F. Highgrove	2.90
Searchlight, S. S. McPherson	3.45
La Palma, A. C. G., Azusa	3.50
Pointer, A. C. G., Glendora	3.40
Eagle, A. F. Highgrove	2.85
Planet, S. S. McPherson	4.00
LEMONS—	
Rough Diamond, V. C. Limoniera Co.	$2.15
White Cross, V. C. Lim. Co.	2.45
Plain	1.90
Bridal Veil, V. C. Lim. Co.	2.75
Flower, sd, Ely Gilmore	2.80

Milk Coolers, all sizes and prices. Guy F. Kelsey & Co., 106 East Eighth St., Los Angeles, Cal.

PITTSBURG, Aug. 7.—Market strong on Valencias, advancing on lemons. Warm.

VALENCIAS—	Avge.
Parrot, S. A. Ex	$3.45
Parrot, S. A. Ex	3.85
Violet, D. M. Monrovia	3.75
Iris, D. M. Monrovia	4.35
Jasmine, Monrovia	3.70
Hawk, S. A. Ex	2.90
Iris, D. M. Monrovia	4.30
Jasmine, D. M. Monrovia	3.70
Violet, D. M. Monrovia	3.75
LEMONS—	
Parrot, S. A. Ex	$3.45
Quaker Girl, S. T. Whittier	3.80
Hawk, S. A. Ex	2.55
SEEDLINGS—	
Primrose	$2.70

CINCINNATI, Aug. 7.—Muggy. Market declining on oranges, steady on lemons. Three cars Valencias, three California lemons, one foreign lemons sold.

VALENCIAS—	Avge.
Hawk, S. A. Ex	$3.00
Possum, A. C. G., Azusa	3.25
Stork, S. A. Ex	3.65
Red Shield, A. C. G., Azusa	3.40
Parrot, S. A. Ex	2.60
King, S. A. Ex	3.10
LEMONS—	
N. W. B., Loma V. C., Santa Paula	$2.40
Club, S. T. Colegrove	2.30
Rough Diamond, V. C. Lim. Co.	1.10
White Cross, V. C. Lim. Co.	1.95
N. W. B. Stk. Label, V. C., Santa Paula	2.55
Valley, S. T. Colegrove	2.35
Bridal Veil, V. C. Lim. Co.	2.50
Messinas	.50
Mission Bell—withdrawn.	

CLEVELAND, Aug. 7.—Two cars Valencias sold. Market easier on Valencias, higher on lemons. Warm, cloudy.

VALENCIAS—	Avge.
Alhambra, S. T. Alhambra	$3.60
Violet, D. M. Monrovia	4.05
Don Quixote, S. T. Alhambra	3.65
Jasmine, D. M. Monrovia	3.70
LEMONS—	
Pet, S. A. Ex	$3.50
Pup, S. A. Ex	2.65
Arab, S. A. Ex	3.50

ST. LOUIS, Aug. 7.—Cool, raining. Market weark. Two cars sold.

VALENCIAS—	Avge.
Searchlight, S. S. Ex., Orange	$3.85
S. S., S. S. Ex., Orange	2.95
LEMONS—	
Corona Beauties, Q. C. Corona	$2.15
Grove, Q. C. Corona	1.55

SUBIRRIGATION.

(Continued from Page 131.)

and clog the openings with any permanently rooted crop.

"It is well known that roots will enter a very small opening in a pipe to reach the moisture inside, and that they will enlarge after getting through. This is true of the sugar beet, but it is possible that the root of a sugar beet could not enter such small openings as the pores of the pipe made in Texas.

"With crops that are renewed each year, such as some of the vegetables, subirrigation has, I believe, been made successful. In many of these cases, however, the underground pipes were as much for drainage as for irrigation, the localities being where the soil is moist in some seasons of the year and dry in others."

Get in the habit of looking for the silver lining of the cloud, and when you have found it, continue to look at it rather than the leaden gray in the middle. It will help you over many hard places.

Seize, then, the minutes as they pass;
the woof of life is thought;
Warm up the colors, let them glow by
fire or fancy fraught.
Live to some purpose, make thy life a
gift of use to thee—
A joy, a good, a golden hope, a heavenly argosy.

The soul of God's heart moving on,
Owns but the Infinite for home;
Whatever with the past has gone
The best is always yet to come.
—Lucy Larcom.

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DUROCAR

The strongest and easiest riding car in the world

Made in Los Angeles by experienced men who understand the conditions of climate, mountains and desert.

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6 " 7 " " " " " $2,500 " "

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Cows Give 262 lbs. More Milk Daily

After substituting a part of their regular feed with Proteina, says a leading dairyman. ¶ Unequalled for Cows, Calves and Poultry, and fed at a comparative low cost.

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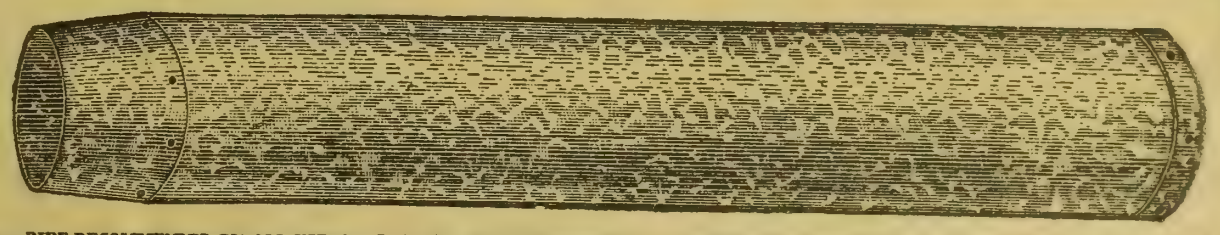
SAVE YOUR TIME WATER and GRADING BY IRRIGATING WITH AMERICAN SURFACE IRRIGATION PIPE



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Merchant Pipe for Steam, Gas, Water

10,000 feet	¼-inch	Standard, at	1c per foot
10,000 feet	⅜-inch	Standard, at	1c per foot
25,000 feet	½-inch	Standard, at	2c per foot
20,000 feet	¾-inch	Standard, at	3c per foot
36,000 feet	1-inch	Standard, at	4c per foot
20,000 feet	1¼-inch	Standard, at	5c per foot
30,000 feet	1½-inch	Standard, at	6c per foot
50,000 feet	2-inch	Standard, at	8½c per foot
10,000 feet	2½-inch	Standard, at	14c per foot
15,600 feet	3-inch	Standard, at	17c per foot
15,000 feet	3½-inch	Standard, at	19c per foot
20,000 feet	4-inch	Standard, at	24c per foot
30,000 feet	5-inch	Standard, at	40c per foot
20,000 feet	6-inch	Standard, at	45c per foot

Oil Well Casings

1,000 feet	10-inch	Diamond B. X. 40-lb. Special Casing, good as new	$1.00 per foot
1,000 feet	11⅝-inch	Casing, at	$1.00 per foot
1,000 feet	9⅝-inch	Casing, at	75c per foot
2,000 feet	7⅝-inch	Casing, at	45c per foot
0,000 feet	5⅝-inch	Casing, at	32c per foot
30,000 feet	4-inch	Casing, at	19c per foot
30,000 feet	3½-inch	Casing, at	16c per foot
20,000 feet	3¼-inch	Casing, at	15c per foot
25,000 feet	3-inch	Casing, at	14c per foot
50,000 feet	2-inch	Casing, at	6½c per foot

WATER PIPE—Riveted Dipped Pipe

10,000 feet 24-inch Riveted Pipe, dipped, good as new	38c
10,000 feet 12-inch Riveted Pipe, dipped, good as new, 10-guage	35c
20,000 feet 10-inch Riveted Pipe, dipped, good as new, 12-guage	35c
10,000 feet 8-inch Riveted Pipe, dipped, good as new, 16-guage	25c
10,000 feet 6-inch Riveted Pipe, dipped, good as new, 16-guage	20c
10,000 feet 4-inch Riveted Pipe, dipped, good as new, 16-guage	10c

20,000 feet of 14, 12, 10, 8, 6, 4-inch damaged Riveted Pipe, used for drain and culvert pipes for under streets, at reduced prices.

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20,000 feet 3, 3½, 4-inch Pipe, cut to 16, 18 or 20-feet joints, for telephone poles, fitted up with cross-arms for that purpose.

We are offering special prices to save handling this pipe. We will fill your order on any amount or size of pipe. Small orders will secure the same attention as large ones. We carry a full line of pipe fittings at reduced prices. Mail orders promptly filled. Check or money orders received. Call and examine this pipe at our plant.

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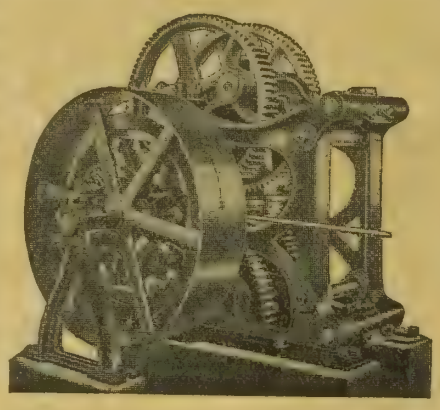

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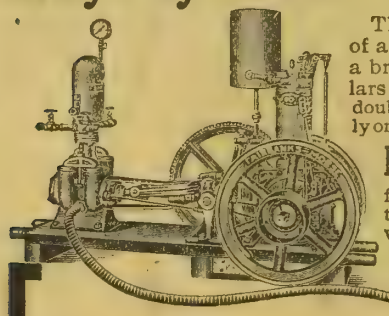

The lack of sufficient pressure or the loss of a few days' time in spraying season from a broken-down outfit will cost you many dollars at the end of the season—more than double the cost of your spray outfit. Is it safe to rely on unknown outfits when you can get a reliable

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for almost the same price? They put you on the safe side and insure your crop. Equipped with the well-known **Fairbanks-Morse** engine, they give an abundance of power and operate at the lowest cost. Then you can use this powerful engine for your work, such as pumping water, sawing wood, etc. Operates on gasoline, kerosene, distillate or alcohol. Outfit can also be furnished mounted on trucks with tower and tank complete.

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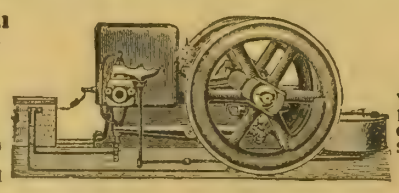
Guaranteed for 5 years to deliver the actual horse power as stamped on the name plate.



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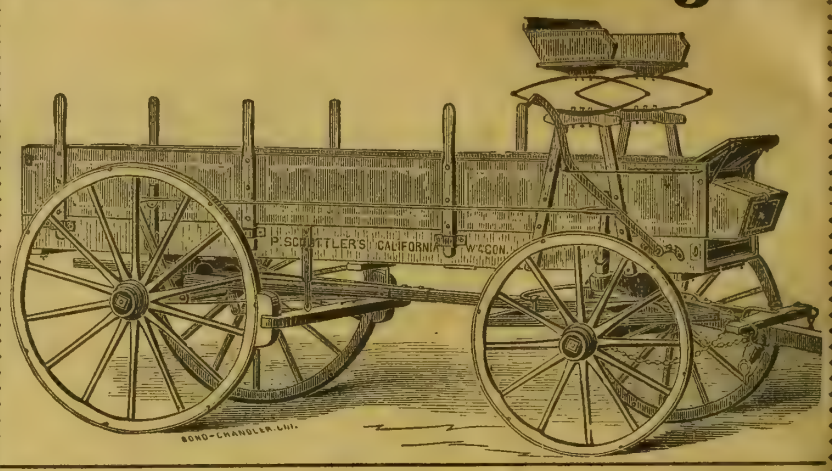

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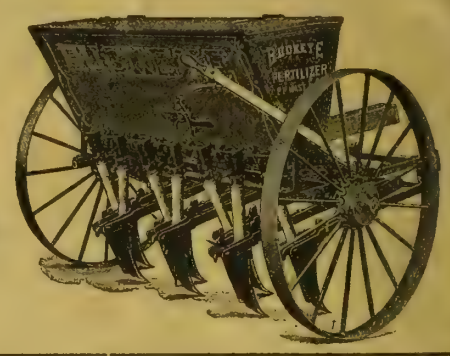

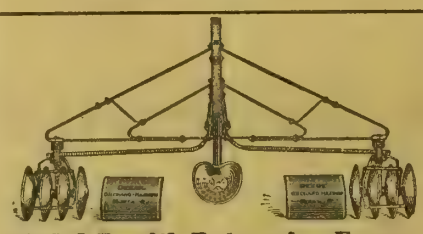

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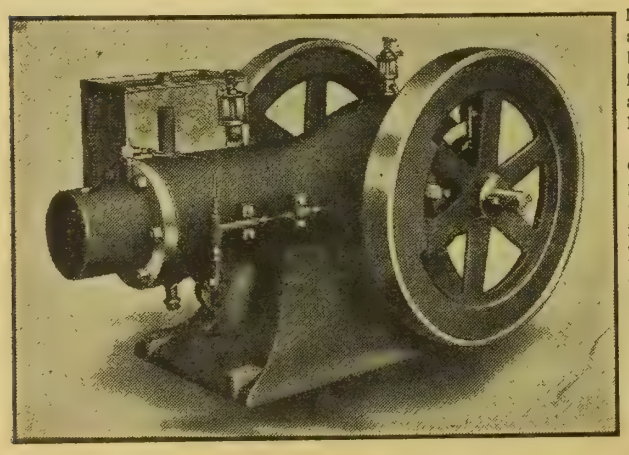

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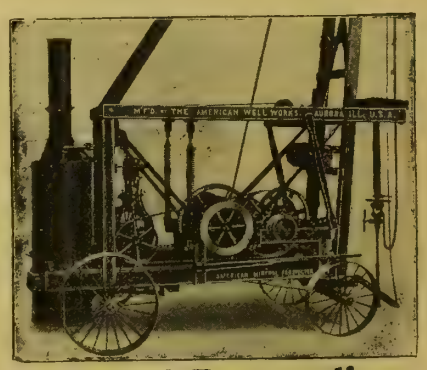

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California Cultivator

Vol. XXXVII. No. 7. LOS ANGELES: THURSDAY, AUGUST 17, 1911 One Dollar the Year

Marketing the California Honey Crop

Ripeness the First Essential of Good Honey

Written for the Cultivator by Ralph Benton

At this time of the year when the honey is on the hives and in the extractor and in the tank, a few pointers in regard to successful marketing seem opportune. It is an acknowledged fact, in the commercial world, acknowledged as far East as Florida, that although citrus shipments from California are yearly and in season monthly increasing, there is yet no cutting or glutting in the market, so well handled is the citrus enterprise. There are perhaps three outstanding reasons why the citrus market stands fast and keeps pace with the growers behind the market. The first of these is ripe fruit—a first-class product carefully graded, and neatly and attractively packed. Here is a lesson well worth considering by the California honey producer.

Grading and Packing.

First of all the man who expects consistently to have a regular market for and secure a good price per pound is met with. The demand of the market that comb honey be practically all sealed precludes in a large measure the possibility of unripened honey in this form reaching the market. The extracted honey producer may wish to know when his honey is ripe. With reasonable degree of safety it may be said that honey that is thoroughly capped is ripe. We are mindful of the fact that completely capped comb honey sometimes sours or sweats; but we are of the opinion that such fermentation is due to some extraneous or other cause rather than to an improper ripening on the part of the bees. However, this is one of the fine points in the chemistry of honey yet to be determined. The pertinent fact for extracted honey producers in this connection is that honey does not have to be entirely capped and in some instances even capped at all to be reasonably ripe. We say capped at all advisedly. For all practical purposes

A Ventura County Bee Ranch.

for his honey must produce uncompromisingly an evenly good product, the very best that his ranges will permit of. It is not necessary that it be a water-white honey, but of whatever grade it is, let it be properly graded; let it run even within a grade; let it be priced consistently in accordance with its grade, and above all, let it be thoroughly ripened and neatly and attractively packed. Second hand and battered or rusty cans should never be used and sticky, besmeared and weather-beaten cases should never be tolerated.

When Is Honey Ripe?

It is gratifying to note that beekeepers are slowly coming to realize the importance of having their honey thoroughly ripened before extracting it. There never has been much question about unripened or green comb honey in the market though occasionally sweated or fermented comb honey except under rarely occurring conditions at least a third to one-half of the honey should be capped before it can be safely pronounced ripe.

The popular notion abroad that the worker bee just before capping the honey cell, inserts her sting and injects a drop of formic acid for the ripening and preservation of honey is a fallacy without a single recorded observation to ground it on. That formic acid turns up in a chemical analysis of honey, that it has, no doubt, preservative qualities, and that the chief glands for the elaboration of formic acid are the poison glands connected with the sting, are observed and known facts; but in drawing the popular fallacious statement above cited, is where the error enters in. In this dilemma a physiological fact comes to the rescue, e. g., that a test for formic acid may be secured from any of the internal structures of the worker bee and that this is especially true in the glands and glandular products in the head and thorax of the bee concerned with the transformation of flower rectar to honey.

Evaporation not Ripening.

Time was when the evaporation of water from flower nectar or from partially ripened honey was thought to be the essential process of the ripening of honey, and that this could be done as well artificially or in the honey tank as by the bees in the hive. The pendulum is now on the backward swing as experience and investigation indicate that the ripening of honey is not merely evaporation, in itself a physical change, but that it involves certain chemical changes, which changes cannot be wrought as far as present knowledge goes except by the same little toilers who are likewise the only recognized agents for the collecting and storing of flower nectar in available quantities for commercial purposes.

Chemical Composition.

Flower nectar when first gathered contains on an average 76 per cent water, 9 per cent invert sugar, 12 per cent cane sugar and 3 per cent chiefly dextrine and ash. The maximum or minimum percentage of these compounds recognized as the standard for honey by the American Association of Chemists, is as follows: Not over 25 per cent water, not less than 64 per cent invert sugar, not over 8 per cent cane sugar, not over .25 per cent ash, with a balance of 2.75 per cent chiefly dextrine, including a trace of formic acid. The average American honey contains over 7 per cent less water than permissible by the standard and about 6 per cent less cane sugar, the lessening amounts of these two compounds permitting a considerable increase in the amount of invert sugar. Aside from the diminution in amount of water in the process of ripening honey from 76 per cent, the figure for flower nectar, to 25 per cent, the maximum figure allowable in honey, which on the average falls to 17.59 per cent, and in California sage honey as low as 16.43 per cent, it will be noted that the greatest change is the relative amounts of invert and cane sugar present—a change brought about in the process of ripening through the agency of the bee, a process which cannot be accomplished artificially. The relative figures of sugar in flower nectar stand 9 per cent to 12 per cent cane; in the standard not less than 64 per cent invert to 8 per cent cane; and in the average honey 74.52 per cent invert to 1.98 per cent cane. The great amount of increase in invert sugar might be said to be due to the decrease in amount of water, but this same law of proportion would also increase the percentage of cane sugar which is far from the case. In fact despite the diminution in water the 12 per cent of cane sugar in flower nectar is reduced in actual percentage in California sage honey to 3.39 per cent and in the average American honey to 1.98 per cent. The following tabulations are given to facilitate making comparisons:

Type	Water	Invert Sugar		Cane Sugar	Ash	Dextrine	Formic Acid	Undetermined
Flower nectar	76.00	9.00		12.00	.25	2.75	.....	.....
Chemists standard	25.00	64.00		8.00	.25	2.75	Tr.	.....
Average for America	17.59	74.52		1.98	.23	2.09	.09	3.61
Poplar honey	17.02	65.80		3.10	.76	10.19	.19	2.94
Honey dew	15.46	64.84		5.27	1.29	10.01	.15	2.98
		As Levulose	As Dextrose					
Alfalfa	16.56	40.24	36.85	4.42	.07	.34	.08	1.43
Sage	16.43	24.35	46.40	3.39	.07	.62	.06	8.68

BEE OUTLOOK IN THE SAN JOAQUIN VALLEY.

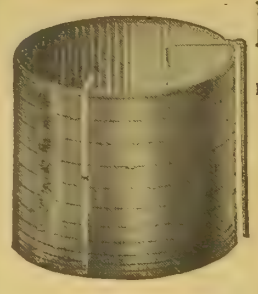
By J. G. Gilstrap, Ceres.

This spring was rather cold and rainy and bees did very poorly during the spring months. I never saw bees so stubborn in manipulating for queen rearing. Swarming was light during March and April; about May 1st nearly all drones were killed off. About the twentieth of May the weather changed to warmer with less wind, and drones! well, they are at this writing, June 3, filling all available drone comb with brood. Until this change of weather many had to feed the bees, but now they are laying in some surplus, and taking the swarming fever. The outlook for a honey crop is better than usual now. Beekeeping is receiving more general attention in this part of the state than ever before, and 'ere many years this is going to be quite a honey-producing section.

BEES BUILDING COMB UPWARDS.

Lately mention has been made in different bee papers of bees building comb upwards, and pictures of such combs have been given. The fact is that bees will probably always build in that way when conditions favor it. At the beginning of the honey harvest it sometimes happens that place has not yet been given for storing surplus, but an empty super is over the brood-chamber. In that case, if the super is deep enough the bees will surely begin building upward from the brood-frames.

A peculiarity of this upward building is that the bees do not build straight, parallel combs, but circular. It is easy to see a good reason for this. Set a sheet of tin on one edge, and it will immediately fall over. But bend the sheet into a curved form and stand it up on the curved edge, and it stands upright. Just so a straight comb built upright would fall over sidewise, while the circular comb stands erect.—American Bee Journal.



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TRICKS OF THE TARIFF.

By F. J. Dyer.

The farmer and fruitgrower is likely to feel that he is too often discriminated against by the railroads, by the tariff, by the commission men, by almost everyone with whom he comes into contact. He has so long been pictured as a "rube" who readily buys green goods and gold bricks that he is tempted to think, at times, that even Uncle Sam looks on him in that light. For years the farmers have been asking for the same measures of protection in the tariff that has been accorded freely to the laboring man and the manufacturer. Has he got it? Not always. Occasionally the man who tills the soil has got something but it has been hard won, and no sooner did he get it than powerful forces were arrayed to snatch it away from him.

Take a concrete case. In Florida and California the climate was found to be suitable for growing oranges and lemons. Enterprising pioneers in both states took up the new lines with enthusiasm. They met with many discouragements and setbacks. There were insect pests, frosts, droughts, scarcity and high cost of labor, unknown problems to solve, years to wait for returns, and competition from foreign lands when other problems had all been reduced and success achieved. Orange growing reached a stage where the home growers controlled the market and competition was little feared. Lemon growing continued to be a hard fight, although the problem of producing a better lemon than the imported had been solved and 50 per cent of the home market was supplied by home-grown lemons The extension of the market was checked because the importers, with cheap home labor and cheap ocean freights, could and did, keep the American fruit from reaching the seaboard whenever they wished to do so. Congress wanted to give the American growers an even break, and added one-half cent per pound to the tariff on lemons, or about one and one-third cents a dozen, one-eighth of a cent on each lemon. During the hottest portion of the summer lemons sold in Washington at 10 and 20 cents a dozen. No one found any complaint with this except the Italian importers in New York City. They started in at once to raise a slush fund to fight the tariff. The growers in Sicily and Italy agreed to pay from 5 to 10 cents on each box of lemons imported into the United States to help fight the tariff. They began a campaign to arouse the American public to a belief that it was being wronged, and to influence Congress to remove the tariff on lemons. Congressmen were appealed to by the agents of the importers, the pushcart men and the retail fruit dealers. Untruthful petitions were circulated, so untruthful that their mendacity was evident at a glance. One form of petition refers to the "burdensome duty on lemons," alleged to be "for the purpose of doubling the wealth of ten or a dozen millionaires of California, and also for the purpose of paying the wages of tens of thousands of Japanese soldiers who exclusively monopolize the labor of the California lemon orchards, thus depriving American laborers of opportunity of labor and wages." This is very absurd as well as false. To patronize the foreign lemon growers and steamship companies would be better, the importers think, than to patronize American railroads, American orchardists and American labor. Japanese are employed to a very small extent in the region where lemons grow. If there were enough white labor they would not be employed at all. Moreover, oranges and lemons are now grown in Arizona, Texas, Florida, Alabama, Mississippi and Georgia.

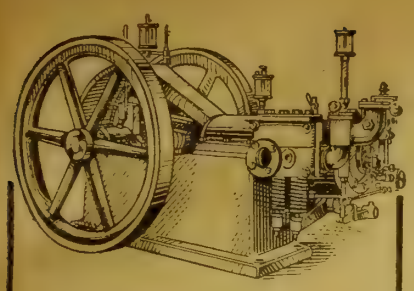
Such petitions as those just referred to have been circulated at Atlantic coast summer resorts by "barkers," such as those who attract attention to the shows at seaside amusement parks, and many small boys signed them. Posters have also been displayed by these Sicilian agents charging the "high cost of living" on the lemon tariff, which would not cost the average person one cent in a year, if anything at all, for lemons have actually been cheaper this year than they were before the duty was increased, so that the dealers (who are really at the mercy of the importers), are promising a great deal if they promise to reduce the cost of lemons in case the present tariff is repealed.

The fact is that the duty was not a serious burden to the importers until very recently, because the execution of the customs regulations permitted them to claim, and to obtain, a rebate for alleged rotten fruit, amounting sometimes to fifty per cent of the cargo, which they were clever enough to sell afterwards as first-class, sound fruit. This has been stopped. A close observer in Washington said recently:

"What the government has lost in customs frauds will never be known, but as Collector Wm. Loeb, Jr., has shown at New York alone, the sum must reach many millions of dollars. Importers have shown the greatest cunning as well as unscrupulousness. They have had to refund millions of dollars to the treasury department. Some of the Italian importers were sent to jail. The Italian lemon importers are the latest to have been circumvented, but the government had to revise the regulations for the importation of lemons in order to head them off, and it took eight months to find out how to meet the case. Aided by an almost unlimited 'slush fund' put up by the Sicilian lemon growers, and by very shrewd and resourceful lawyers who are spending money lavishly to buy magazine and newspaper space, the Italian importers are now seeking to have the tariff revised in their interest. This is not the first time foreign interests have tried to shape legislation in Congress, but it is one of the boldest."

The way the treasury department stopped the importers from obtaining too big an allowance for decayed fruit was to make the estimates for rot on the samples displayed for sale. Almost any disinterested person would say that this was fair, but the importers protested wildly and vehemently. The treasury department, however, thought mere noise no argument, and the amount of money collected has increased.

The fact is, the tiller of the soil, although he thought it a bad thing for him that the reciprocity treaty should go through, has got to be con-



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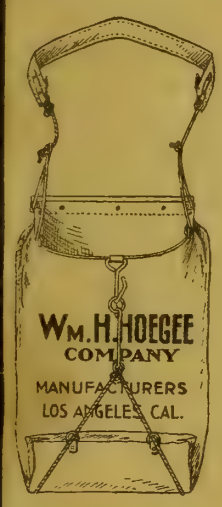

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sidered when it comes to fixing up a list of producers who must have a fair share of protection. Legislation by Congress should be for the benefit of the people Congress represents, and not for the benefit of Sicily, Japan, Mexico, Spain, or any other country.

One reason why many men, after retiring from business undertake orange and lemon culture is the romantic interest attaching to it in a land where winter is unknown. But they need some profit to keep them interested in their work. Unless the efforts of the importers to cripple the industry in California shall succeed, the orange and lemon groves of that state will prove to be among the most interesting things the visitors to the 1915 Panama Exposition in San Diego and San Francisco will see.

ALLIGATOR PEAR, AVOCADO, AHUACATE?

When in 1530 Cortez landed in Mexico the Ahuacate was a popular fruit among the natives, and had been known to them under that name many centuries. And it was so much prized by the conquering Spaniards that it was soon introduced in Santo Domingo, Cuba and the other islands which still retain the name of West Indies. In the British Colonies the name of Ahuacate became corrupted into Alligator pear, and in the French islands into Poire d'Avocat and Avocatier. In our own times this French corruption gave birth to the name of Avocado, which has no meaning, and no historical base. Why, in the name of common sense, must not the name of Ahuacate be retained? It is the aboriginal name and it is no more difficult to pronounce than Avocado.

In South America, where the tree is not as common and not so popular as in Mexico, it bears the name of Palta, said to be originated from a locality in Peru, where it was first brought into notice. A more hardy form, with rather small fruits, is known in Chile under the name of Paltita, that is "small palta."

Quite recently somebody has fancied to change the old respected and expressive name of Persea Gratissima of Linnaeus into Persea Americana, evidently a misnomer, there being several other species of the genus Persea which are native of the American continent. One cannot protest strongly enough against this modern craziness of creating new names for old things.—Dr. F. Franceschi.

Mr. J. P. Gilbert, of the University of Illinois, said in a recent lecture on "Birds of the Farm and City," that the hunters of the cities who did not realize the value of birds to farm products made possible an annual loss from farm insects to crops and forests of the United States of $70,000,000.

Mr. Gilbert said it was due to destruction of quail in Illinois that the potato bug was becoming such a pest; that quail on the table is worth a few cents, but that quail on the farm is worth many dollars; that every hawk and owl is worth on an average $30 to the state; that one "flicker" can eat 5,000 ants at a single meal; that the kingfisher is the most powerful defender of the poultry yard in existence.

The state of California has appealed its case wherein the question has been raised as to whether certain Palo Verde lands are overflow lands and consequently state property. The former decision was in favor of settlers who have filed homestead claims.

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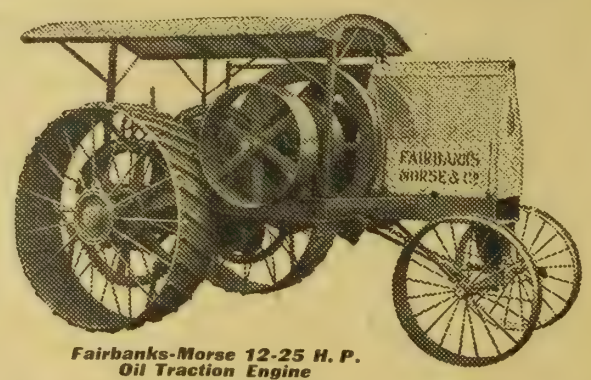

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FERTILITY OF THE ORCHARD.

One of the problems that always confronts the fruitgrower is the keeping up of the fertility of his orchard. A tree has been compared to a cow tied to a stake in the pasture. The cow can get along very well till she eats up all the grass within her reach and then she must be moved to a new position or feed must be carried to her. The roots of the tree will ultimately consume all the fertilizing material within their reach but the tree cannot be moved like we moved the cow. This comparison is not a perfect one for all the grass within the reach of the cow can be used as fast as she needs it, but much of the fertility reached by the roots of the tree can not be used as fast as it is needed for the very simple reason that much of the fertility in most soils is not in the available form. That is a fortunate condition in many cases, for if all the fertility could be used at once, two things would happen; one would be that the soil would be too rich, and the other would be that the soil would soon be completely exhausted. So when we speak of the exhaustion of the soil we say that it will "ultimately" be exhausted.

Seven elements of fertility must be in the soil in order for plant growth. Some of these are used so sparingly that it is often said of them that they are practically inexhaustible. Iron, sulphur and magnesia are of this class. Lime may be abundant for a long time and it may not be. To treat of lime and its function in plant life would require a separate article. The three elements of fertility that we must be constantly looking after are nitrogen, phosphorous and potash. These three must be found in sufficient quantities and in available form or trees or any other kind of vegetable, will not do well. If these are kept in the soil and in some cases the lime is looked after all kinds of plants will flourish.

Now, in view of the importance of nitrogen, phosphorous and potash we often see the recommendation to buy these combined in proper proportions. They should always exist in the soil in proper proportions, but it does not follow at all that they should always be bought combined in the proportions in which they should exist in the soil. A little reflection will convince any one of the saneness of this statement. One of these elements may be so nearly exhausted as to need to be replenished while the other two may be abundant. This condition often exists. It is well understood by those who carefully study these things that some soils become deficient in nitrogen, while the phosphorus and potash are abundant. This condition prevails today in more orchards where the soil is volcanic ash than many persons are aware of. I have had this condition in my own orchard and have applied the remedy with absolute success.

It is often recommended that analysis of the soil be secured, in order to learn what elements are abundant and what are deficient. That will not be an infallible guide for the very simple reason that the elements may be in the soil but not in the available form. The best guide I have ever found is to study the conditions of my trees. This is especially the case so far as the presence or absence of nitrogen is concerned. Nitrogen gives vigor to all plants. So we may know that when trees look vigorous and their leaves, during the growing season, have a dark green color, that nitrogen in the available form is abundant, but if the trees look feeble and the leaves have a palish look, during the growing season, we know that nitrogen is lacking or that it is not in the soluble form. To buy a combined fertilizer in such cases would probably be a waste of money. Should we buy nitrate of soda, commonly called Chili saltpetre, and apply it to the soil in the spring it would work a great change. But I would never buy nitrate of soda or any other form of commercial nitrogen for the simple reason that I can get all I want for nothing. This I will explain:

Nothing is so abundant all about us as nitrogen; 79 per cent of the air is nitrogen; every time we take a breath of air into our lungs four-fifths is nitrogen. But this nitrogen of the air cannot do plants one particle of good, because it is not in the available form. The free nitrogen combined with soda, potash, magnesia or lime becomes nitrates. Chili saltpetre is nitrogen combined with soda, hence is known as nitrate of soda. Now, our plant physiologists have found out that certain kinds of vegetables have the capacity of taking this free, unavailable nitrogen of the air, and combining it with certain elements in the soil, can furnish nitrates just as good as we can buy. These plants are called legumes, because they grow their seeds in pods. These legumes not only make all the nitrates they need for their own growth, but leave a residue in the soil for the benefit of other plants. These legumes have little nodules on their roots which are filled with nitrates. The best known of these legumes are the clovers, alfalfa, the vetches, peas and beans. There are others, but we need not now mention them.

When an orchardist finds that some of his trees are beginning to look feeble he need not rush off and buy nitrate of soda, guano or some other form of commercial fertilizer, but let him sow clover among his trees and he will find that the vigor will, in a few years, return and continue as long as some legume is grown in his orchard. Sweet clover (Mellilotus alba), so much despised by many farmers as a weed, is one of the best nitrogen-gatherers; so are vetches, especially the hairy vetch; so are beans and peas.

Some five or six years ago a man who owned a good orchard of bearing apple trees came to me and said that some of his apple trees had lost vigor, and that the fruit was not so large as it had been. He said that he had thought that it was something lacking in the irrigation, and that he had tried to thoroughly irrigate these feeble trees, but there was no change for the better. He said the condition was a mystery to him, for his trees along his laterals in his orchard remained vigorous and he had supposed that the irrigation had something to do with their vigor. Upon examining his orchard it was found that alfalfa seed had floated in from a meadow through which the water runs before coming to the orchard and the result was that alfalfa was growing vigorously for two or three rods on each side of his main laterals. I had the same condition in my own orchards. There was the solution. This growth of alfalfa was replenishing the failing nitrogen and thus keeping up the vigor of the trees. But where there was no alfalfa the trees remained feeble. Then I explained to the man that his orchard had, to some extent, exhausted the supply of nitrates in the soil and that

he must buy nitrates or build up with legumes. In my own orchards I have built up the nitrogen content and have never paid a cent for commercial nitrates and never expect to.

People who have lived some years in the country where alfalfa is raised for hay, know that if they plow up an old alfalfa field, that it is enormously rich. Plant young trees in such a field and it will be seen that they will grow very rapidly and the foliage will be very dark. Plant such a field to potatoes and the yield will be phenomenal. The fact is that such fields are very rich in nitrates. Where alfalfa or the clovers cannot be successfully grown I would recommend field grass. If we plow under a crop of vines now and then and let them rot it will help in restoring the nitrates, for when vegetables decay in the soil it helps in the formation of the valuable nitrates. Some people think that even the legumes will not benefit the soil, unless the tops are plowed under and allowed to rot, but we now know that that is a mistake, for many an alfalfa field has been made immensely rich that has never been plowed at all. This is known by my own experience.

Millions of dollars are paid out every year by the people of the United States for Chili saltpeter. Now, I will not say that all this might be saved by the growing of legumes, but I do most unhesitatingly say that much of it could be saved in that way. So important is this matter that the Department of Agriculture is carrying on experiments along this line. Professor C. V. Piper, formerly a student and a graduate of the Washington State University, and for some years professor of entomology at Pullman, is at the head of this work. He has sent us seeds of the various legumes and we are carrying on experiments in our orchards. He has visited our orchards to look into what we are doing along this line. He is in full accord with the ideas set forth in what I have just written about legumes. He believes that much money spent in importing nitrates could be saved by growing these nitrogen-gathering plants. One of the chief points we are trying to settle for him is to find out what legumes will reseed themselves, for it is too costly to buy seeds for the annuals. We have practically settled that red clover, hairy vetch, yellow tree-foil and sweet clover can be depended on to reseed themselves. By the use of the legumes and alfalfa, which being a perennial, needs no reseeding, we can make our soils rich in the nitrates at no cost at all except the starting. The great importance of this matter and the great saving to be secured by the study of this matter and the growing of legumes is my excuse for treating the matter so fully.—F. Walden in the Ranch.

APPLE ANNUAL.

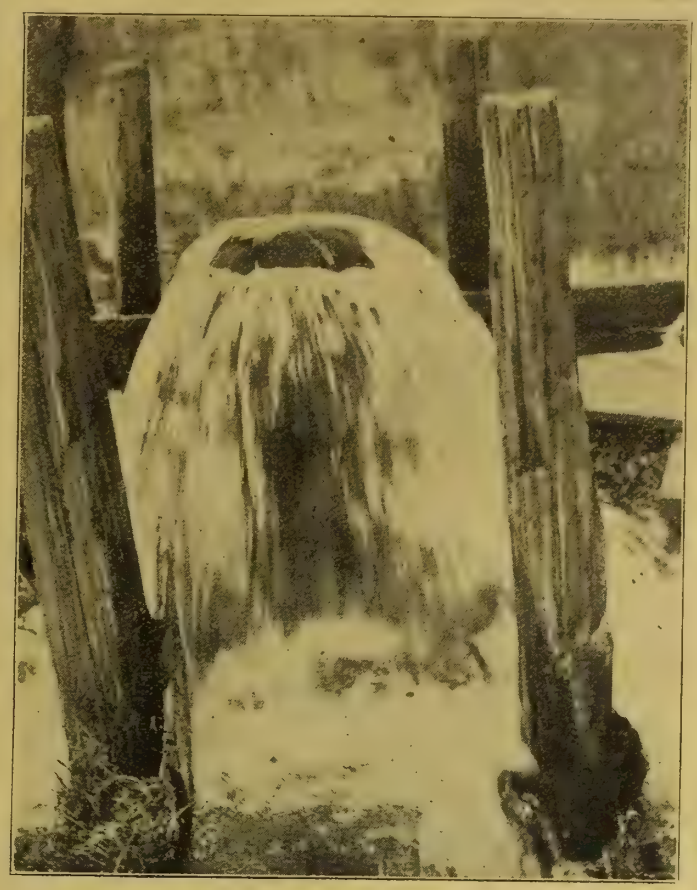
Preparations for the "Apple Annual," California's great apple show, the second one of which will be held at Watsonville October 9-14, are forging ahead and prospects are that last year's success will be eclipsed. In addition to creating an interest in a better and more uniform pack, more careful selection and other features tending to improve the market for local packers and growers, the first Apple Annual held in 1910 was remarkable in its demonstration of the apple growing possibilities of other sections of the state.

For example, there were fifteen counties represented. These took one hundred first prizes and thirty second prizes. Tuolumne county took thirty-four first prizes and ten seconds, a most remarkable showing, each prize being awarded, not for manner of display, but quality of fruit. Sonoma county won twenty-three first prizes and eight second prizes, the apples from that section being splendid specimens. Eldorado was close after Sonoma with twenty-three first and three second prizes. Siskiyou county sent one exhibit only, but it won a first prize. Santa Clara carried off three, San Luis Obispo four, Mendocino three, Butte five, Los Angeles one, Modoc four and Mariposa one.

It is expected under the stimulus of more prizes and cash prizes this year the displays from districts outside Santa Cruz county will be larger and greater than ever. The premium list is now being prepared and will be ready to announce very soon.

Additional space has been provided for this year, the large auditorium constructed especially for the purpose of housing the annual having proven entirely inadequate.

Last year's exhibit consisted of twenty-six carloads of six hundred forty boxes each—a low estimate—one hundred forty apples to the box, or three million, two hundred fifty-five thousand, two hundred eighty-three apples, more than ever exhibited at any show in the world. Allowing each apple a diameter of three inches and placed end to end, the fruit would have reached from Watsonville to San Francisco and across the bay to Berkeley.



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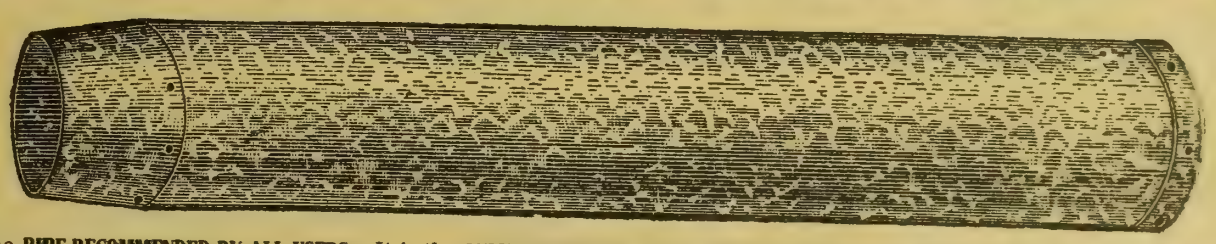

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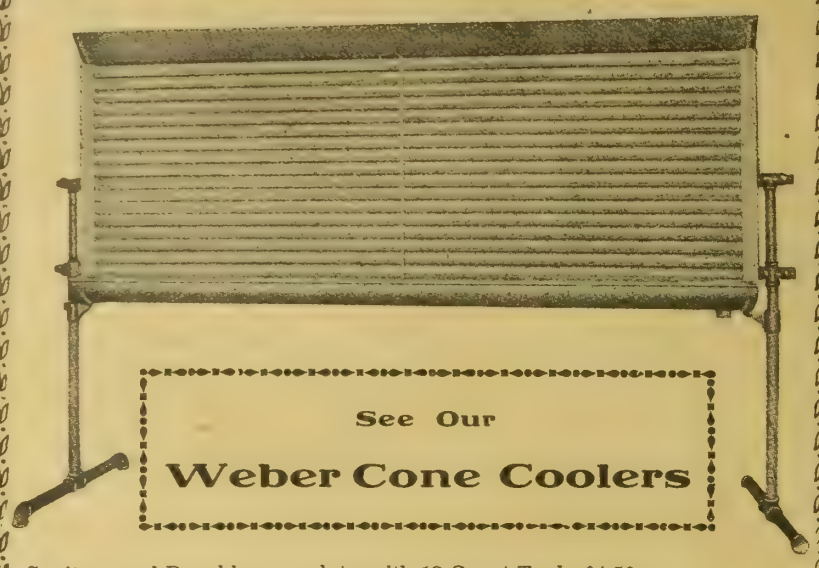

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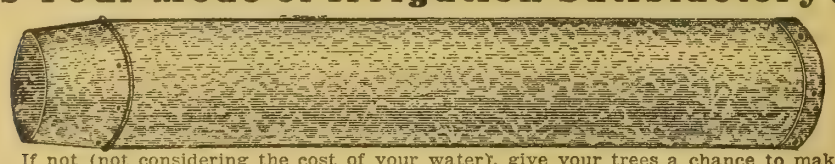

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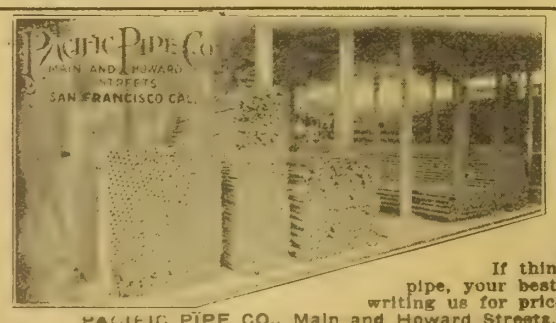

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ENSILAGE IN SUBTROPICAL COUNTRIES.

By A. E. Vinson, of the University of Arizona Agricultural Experiment Station.

The increasing agricultural prosperity of those communities in the cold and humid corn belt, where dairying predominates, is probably due to the silo as much as to any other single factor. The silo has made possible a dependable supply of succulent feed through the long, cold winter, and has thus increased the annual output of the herds. By eliminating husking and subsequent care of the grain the silo has decreased the cost of harvesting and feeding ensilage crops, and has retained upon the farm much valuable fertilizer. In humid countries siloing is especially adapted to preserving coarse fodders, such as corn and sorghums, which cannot be cured easily as hay; or crops which suffer loss of leaf and fruit in handling dry, such as cow peas.

The lack of silos in the warm, semi-arid Southwest is due to several causes. The principal forage crop being alfalfa, a considerable supply of green feed is available throughout the greater part of the year; and corn, the principal crop for ensilage in the north, is grown to a more limited extent. Thus the attention of ranchers has been less directed to the subject, although four or five silos have thus far been built in Arizona. On the other hand, under our climatic conditions, hay can probably be made and handled more cheaply than ensilage, and does not require expensive buildings for its preservation.

The advantages to be anticipated from silos in this region are several. A supply of succulent feed could be kept available for the short winter period of poor pasture, and again for the long period of summer drouth. This is especially important where dairying is practiced and where there is a scant supply of irrigating water for the pastures in late spring and early summer. In some localities it might be possible to grow fodder corn or sorghum with the summer rains. This forage could be siloed and fed to range stock during the drouth of the next year, or used to fatten them for market. It has been found by R. W. Clothier, Agriculturist of this Station, that as much as three and one-quarter tons per acre of sorghum can be produced by dry farming methods in some parts of Arizona. As he suggests, this could be preserved as ensilage in succulent condition until needed.

Another advantage of ensilage as compared with dry feed is its especially favorable influence on the production of milk, increasing the amount and improving its color and that of the products made from it. The coarser parts of the forage are also more closely eaten than when fed dry, and the loss of tender leaves and of seeds avoided.

Observations in Northern Africa.

Although silos have long been in successful operation in cold countries, there has been no experience establishing their value in the semi-arid, subtropical Southwest. Observations, however, on the practicability of silos under these conditions have been made by the writer during recent travels in the French provinces of Northern Africa. Several planters were interviewed who are using the silo, and others who contemplate building silos soon. Algeria and Tunis are, in most respects, very similar to our own Southwest, so that, as far as climatic conditions are concerned, we may expect French experience to be of value to us.

A planter at Boufarik, in Algeria, who has been very prosperous and is well known throughout that region for his intelligent and successful management, has used a cemented pit silo for over thirty years. He states that he fattens three times as many animals per unit of land with corn ensilage as are usually fattened with hay of oats and vetch, locally called "forage." His ensilage has kept in good condition in that climate for two years. In March, corn siloed the previous summer was found excellently preserved. Various legumes, including alfalfa, have been successfully siloed at that place. Alfalfa, however, must be fully matured or else allowed to dry partially before being put away. The pomace from the wine presses is also siloed after the residual alcohol has been distilled off, but the resulting feed is of low value and probably could not be profitably fed where labor is expensive.

The silos at Boufarik are of the old style pit form. The entire group of pits, measuring about 40 by 150 feet, is divided lengthwise by a central wall and subdivided by cross walls of stone masonry into smaller pits of from thirty to eighty tons capacity. These pits extend ten feet below and the walls rise four feet above the ground. The depth is limited to that convenient for removing the ensilage. Doorways through the upper part of the wall are provided for each pit. The roof is carried on masonry pillars, leaving the space above the walls almost entirely open. All the pits are cemented on the inside and provided with cement floors. After thirty years of continual service these silos are in fairly good condition, excepting that the longer dividing walls are somewhat sprung from the pressure of the ensilage, and in some places have required bracing. The owner has found but one fault in their construction; the roof is too low to permit stacking sufficient material to make up for subsequent settling. The cut feed is piled as high as the roof will permit, covered with eighteen or twenty inches of chaff or fine cut straw, over which boards are placed, and the whole weighted with stone. The straw decays, but the green feed immediately below is generally found to be well preserved. The same planter has recently constructed other silos on the same general plan, but with higher roofs, which allow much higher stacking and insure a full pit after fermentation is completed.

The Silo.

Silos of the pit form described above are not recommended under our conditions, because of the labor involved in packing the ensilage sufficiently,

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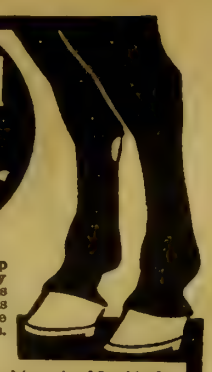

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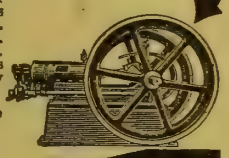

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and in placing and removing the final weighting material. The losses also are generally greater than with above-ground circular silos. They offer some advantages for siloing small crops which cannot be mixed in the same silo, such as corn and beet leaves and tops, because they are easily divided into smaller units by partitions. This is not practicable with the round silo. The high silo has been found to be most economical, because the weight of the contents is sufficient to compress all but the top layers of ensilage, and these can be fed before they spoil.

A discussion of the details of silo construction is not within the scope of this publication. Such information, however, is readily accessible in any of the numerous handbooks on silos, farm management and kindred subjects. For that reason only a few of the leading principles will be mentioned.

Silos should be round, because that form encloses the greatest volume with the least wall space and leaves no sharp corners to prevent the settling of the ensilage. For the same reason the inside walls should always be as smooth as possible. They may be built of masonry, concrete or wood. Masonry silos are highly satisfactory when cemented smooth on the inside, but their cost is usually prohibitive. Concrete silos are durable, and will find favor in localities where cement is moderate in price, and lumber expensive and subject to rapid decay. Since protection from frost is unnecessary in the Southwest, reinforced concrete silos with relatively thin walls could probably be constructed to advantage. Wooden silos are most popular where lumber is plentiful, because they are serviceable and easily and cheaply constructed. In northern climates, with care not to have them in use during the summer, they last many years.

The older forms of wooden silo were built of staves set on end and held together by iron hoops provided with tightening devices. This form has proved very satisfactory. The newer structures are built of 2x4 studding erected on a suitable circular foundation and bound together both inside and outside by a double layer of tightly fitting wooden hoops, arranged to break joints. These hoops consist of thin boards bent and nailed to the studding. Tarred building paper may be placed between the layers of hoops to make the silo more impervious to air and better protect the material next the wall.

The size of the silo should be governed by the number of animals to be fed. The volume of ensilage removed daily will vary with the depth from which it is taken, since the material near the top weighs about one-third as much, volume for volume, as material at the bottom. One cubic foot per day, however, may be taken as the average quantity consumed by each dairy cow. In very warm countries it is desirable to use daily at least four inches of the unprotected surface material to prevent spoiling. Experience may show that even more must be removed. For this reason the silo should not be too large. Two small silos will be found more serviceable than one very large one. The silo should be as high as consistent with convenience in filling, since by this means the pressure is increased, air excluded more perfectly, and preservation of the ensilage in-

(Continued on Page 158.)

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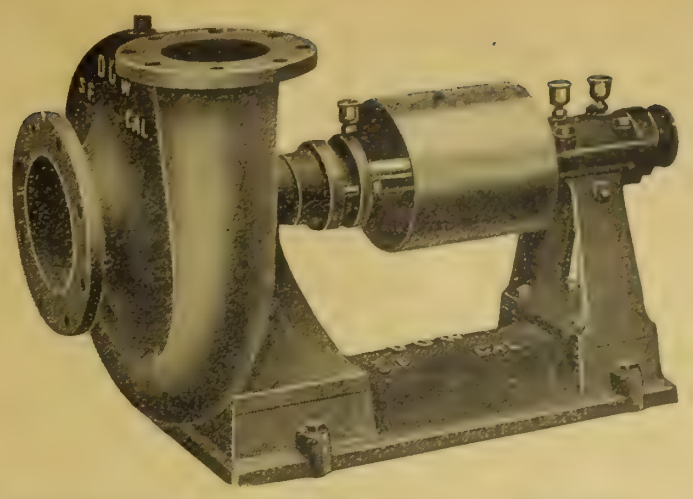

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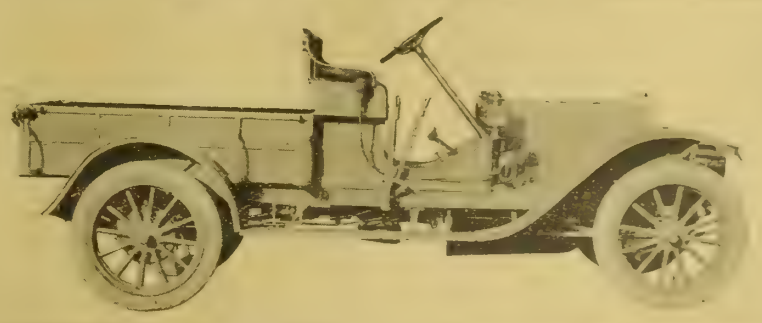

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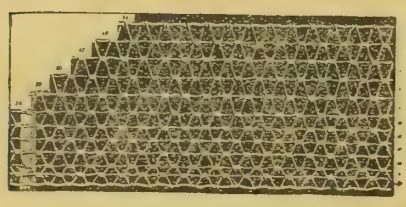

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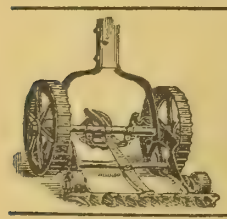

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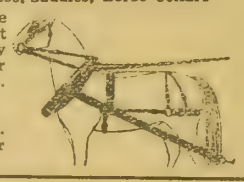

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GARDEN NOTES.

A Missouri grower sends this: If you are growing tomatoes for market it will pay you to use stakes. Either set a stake at each end of the row and run a wire along, tying the plants to the wire, or two wires if that number will be needed. A single stake for each plant is better than the wire, and the plant should be large enough when transplanted to need the wire at once.

A subscriber, speaking on the same subject, writes: Where land is limited, cucumbers and tomatoes may be grown on stakes or trellises. Chicken wire is good for this, or tomatoes may be tied to stakes driven in the ground at each plant, and then all but two or three branches kept cut off, tying those left to the stake as they grow. This results in a little less fruit per plant, but more plants may be planted on the same amount of space. Three feet apart each way is enough.

The South Dakota station conducted some interesting experiments last year on mulching potatoes with straw instead of cultivating them. The straw mulched seed required several days longer to come up, and the vines were more irregular in size during the early summer than those planted deep and cultivated. Later in the season, when the drouth and hot winds affected the cultivated field, the soil under the mulch was soft enough to make mud balls. At this time in the season the mulched potatoes grew very rapidly. When harvested it was found that the straw mulched potatoes were much larger in size but were not as well matured as those cultivated. In a year when there is sufficient moisture there probably would not be any difference in yield, but in a season of drouth the mulch prevents the moisture from evaporating, and consequently there is more of it for the use of the potatoes. If the farmer desires to use mulch, it should be applied at once.

The Department of Agriculture says that tobacco dust is one of the most effective methods of combating cabbage lice. This dust is applied with a bellows blower, or may be shaken on the plant with a pepper box. The blower gives the better results of the two, as it puts the material on with more force. Hot water or strong soap suds heated to a temperature of 130 to 140 degrees Fahrenheit may also be used effectively against these insects. The hot water or suds applied as a spray or with a brush at the above temperature will not hurt the plant, but will kill the lice.

Hellebore is especially recommended for use in the destruction of gooseberry worms and the larvae of saw flies. It is less poisonous than the arsenicals and loses its strength when exposed to the air for any great period. It may be applied dry or mixed with water. If used dry it may be mixed with flour or lime or may be dusted on the plants in pure form. If used with water the proportion is at the rate of one ounce to three gallons.

The man who reads of $1,000 to $2,000 profits per acre in onions or any other crop, and loses his head to the extent of planting a half acre as a first venture, not knowing whether his soil and climate are adapted to the crop or what chances of sale or storage he has, does not use proper discretion.

Globe varieties of turnips are best to set out now for winter use. If planted in the middle of August they should be allowed to grow until freezing begins. They can either be kept in a cold cellar or buried.

If you want your lettuce to make large heads, transplant it, placing the heads one foot apart.—Journal of Agriculture.

THE FOOD VALUE OF WEEDS.

The United States Government has been experimenting with the food value of "weeds" which have heretofore been considered worthless. It has found that many have higher values than well-known staples of food, and that they are not only palatable, but often delicious.

The government has made another investigation into cheap food plants and vegetables that are used abroad and in little-known corners of the world. As a result, whole colonies of nutritious food plants have been imported into the United States.

The roots of the golden thistle have been found to be very delicious and are used like salsify. They may be dug in September and kept through the winter.

Leek is now honored as a food staple. It has very excellent properties and is excellent for flavoring.

The common mallow is a weed that roots very deeply and thus draws valuable mineral elements to the surface. It has a mild, mellow flavor, and those who like lettuce find it delicious. The young leaves are tender and crisp. It is a valuable tonic.

The fields and pastures abound with one of the most valuable vegetables, which is being cultivated in gardens and so planted that it lasts the entire season through. This wild vegetable is the common milkweed, and it is wonderfully delicious. The flavor, when cooked, is exactly like that of asparagus.

The milkweed should be cut when it is about a foot high. Boiled like asparagus and served with butter is the usual way of cooking; it is also delicious as a salad uncooked, the tender tips only being used in this case. The milkweed has medicinal properties and is excellent for the kidneys.

Another weed which when boiled in the same manner as spinach makes a most delicious and nourishing dish is that commonly called "lamb's quarter." The color in the month of June, when it is at its best, is a light silvery green.

The ordinary wild nettle that grows in prickly abundance in every yard and fence corner has long been used in India as a plant food, and has of late years also been eaten in Austria and Italy. It is a good substitute for spinach if properly cooked.

Borage is a weed that used to be extensively used, not only for its leaves, but for its flowers, in salads and also in refreshing drinks, like mint. This was used years ago in Europe and England as a salad and a garnish in drinks, and Martson, in "What You Will," says: "If you have no bottle ale, command some claret wine and bourrage."

To use flower bulbs as vegetables seems a strange thing, and yet those of the dahlia and nasturtium have been found to be excellent. The single red variety of dahlia is the one cultivated for its tubers, and in good soil it is as productive as the sweet potato. They may be planted from seed in early May, and by the middle or last of July the tubers are large enough to dig.

Those who start out to raise dahlias as a garden crop can make a most profitable business of it, for they may have a most gorgeous garden of flowers during the summer and autumn, and then gather in the tubers for a part of the winter food supply.

The ice plant is another familiar flowering pot plant with which we are all familiar in hothouses and gardens. It is now said to be as wholesome as spinach, and in many ways better, as it is not so acid.

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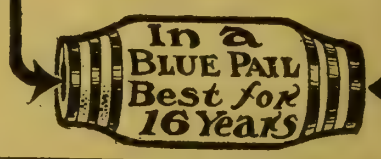

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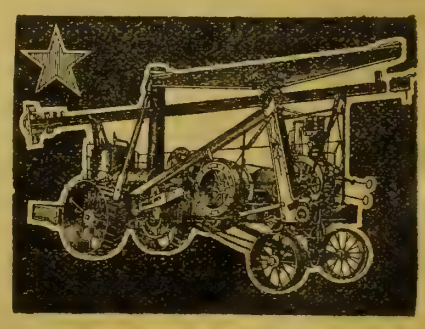

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The Ornamental Garden

SPRAYING DANDELIONS.

By W. L. Oswald, Minn. Univ. Farm.

From the large number of inquiries received at the Experiment Staion regarding the eradication of dandelions, it is apparent that dandelions this year are more numerous than ever on our lawns.

For the past two years, iron sulphate has been used at the Minnesota Agricultural Experiment Station for the eradication of dandelions in lawns. Fairly good success has resulted from these experiments. Although spraying the dandelions does not by any means mean absolute destruction of this pest, it at least kills many of the flowering stalks, and keeps hundreds of dandelions from coming to seed. It also kills many of the younger plants. If one were to spray a lawn carefully once a month for an entire season, the results would possibly warrant the time and expense connected with the spraying. Sulphate of iron is a by-product in the manufacture of wire, and costs from one to two cents per pound. Sulphate, at the rate of 1½ pounds to 1 gallon of water, is the proper proportion to use on the lawns. The solution should be applied with a sprayer which gives a very fine, mist-like spray. This is possible only with a sprayer that has a pump attached so that considerable pressure can be obtained. Apply the solution about three days after the lawn is cut, on a day that is bright and warm. The grass will be somewhat blackened, but little damage results. Some of the white clover, owing to its broad leaf, is somewhat injured. The lawn should be sprayed about once a month. Care should be taken, when spraying, to keep the solution off of the cement walks, as it discolors them.

Prof. LeRoy Cady, of the Horticultural Division, advises that lawn grass seed be sown about two days after the lawn has been sprayed the first time. It has been found at the Experiment Station that the mixture which makes the best lawn-grass seed is made up of blue grass, white clover and red top, at the rate of 14 pounds of blue grass to 2 pounds each of red top and white clover. This seed should be sown broadcast and raked in. Besides this, nitrate of soda at the rate of 150 pounds to an acre should be scattered over the lawn. The nitrate of soda should be applied before a rain, or should be applied in the evening and the lawn sprinkled. The grass will burn if it is not wet after the nitrate of soda be applied. The object sought is to thicken up the grass and thus allow less chance for dandelions.

A FEW DEPENDABLES.

I would not advise the amateur gardener to attempt to grow all the kinds of plants that appeal to her so strongly from the beautifully-illustrated pages of the florists 'catalogs. Better start out with a few of the best, and concentrate your attention on them. By and by, when you have achieved success with these, you can "branch out" and add to your collection as extensively as you please.

The question may be asked—What kinds are best? This is not easy to answer, because individual taste enters largely. But with reference to hardiness, freedom of bloom, ease of culture, and adaptability to all grounds, I would name the following as the best dozen that can be selected from the long list of desirable kinds adapted to amateur culture: Hollyhock, perennial phlox, iris, delphinium, pink, herbaceous spirea, peony, rudbeckia, pyrethrum, companula, dicentra, and the hardier lilies, like the old-fashioned "Tiger," Speciosum album and roseum, of the Japanese class. In "drawing the line" at this dozen, I am well aware that a great many will take issue with me, because it fails to include some old favorites of theirs, but, for the class for which it is intended I feel confident that it will be found as satisfactory a selection as can well be made. It confines itself to plants that any one can grow—and grow well—with the least possible care and the greatest certainty of success, and this is the kind of plant all amateur gardeners ought to choose to experiment with. Every one of these plants will do well in almost any soil—an item that should be given careful consideration by the beginner—for there are many plants that will not succeed under ordinary conditions.

It may be urged that a collection of only a dozen plants is too small to give much variety. But each of this dozen has many varieties, differing in color, size, form, and season of flowering, so that it is not necessary to confine oneself to a plant of a kind. Indeed, so many are the varieties that one might fill a good-sized garden with the representatives of but one plant, without duplicating anything. There is thus a wide range of selection, and it is possible to suit all tastes, in most respects, without going outside this number.—Eben E. Rexford, in Country Gentleman.

PRESERVATION OF CUT FLOWERS

Everybody but those commercially affected will be glad to learn of methods by which not only is the life of flowers in water prolonged, but, in addition, buds are induced to open with greater freedom, and in some cases the colors deepened and improved. The Revue Horticole has published the results of experiments with a great variety of flowers, and declares that such excellent results may be obtained from simply adding sugar or salt to the water that we advise our readers to put the matter to a test themselves. The saying has it, "What's one man's meat is another's poison," and this apparently applies to flowers with much greater force. Sweet peas are said to last best in pure water; carnations to last longest in a 10 to 15 per cent sugar solution; roses in a 7½ to 10 per cent solution; and chrysanthemums in a 15 per cent solution; whereas lilies, lilac and pelargoniums do better in pure water than in sugar solutions, but respond to an addition of 5 per cent of common salt (one pound to two gallons of water). Experiments with other substances, such as nitrates and chlorides of soda and potash, resulted in failure, and in some cases hastened the decay of the flowers, with the solitary exception that phosphate of potash was found to prolong the life of orchids, but the results were no better than those obtained from a 10 to 20 per cent sugar solution. Very possibly florists and some others have long been familiar with these facts, but if so, and of the nature of a trade secret, it has been very well kept.—Gardening.

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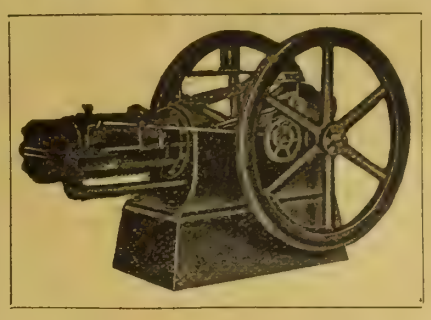

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PRESSURE FOR FREE LEMONS.

California lemon producers must awake to the fact that tense effort is being made to force the lemon issue. As one of the small indications we quote from the New York Times of August 7th, from a clipping sent us through the courtesy of Mr. W. C. McCully of Corona.

The article is headed in large type, "Coney Island Hears Lemon Duty Blamed. New York Merchants Send Lecturer to Explain the Matter to the Holiday Crowd. Petitions to Congress Asking Tariff Reduction Are Signed." From the text following we quote:

"In the midst of the professional barkers who make a bid for the nickels and dimes of the holiday crowds at Brighton Beach, there stood yesterday afternoon an earnest young man who made no appeal for money, but merely urged the passersby to listen as he denounced one particular item of the tariff, and asked them to sign a petition calling upon Congress to reduce the duty on lemons. During the afternoon and evening he succeeded in getting about a thousand signatures to this document. It reads:

"'To the House of Representatives of the United States, Washington, D. C.

"'Gentlemen: We, your petitioners, respectfully request the repeal of the burdensome duty on lemons which was enacted by the Payne-Aldrich bill into a law—at the expense of the great masses of population on the Atlantic seaboard—for the purpose of doubling the wealth of ten or a dozen millionaires of California, and also for the purpose of paying the wages of tens of thousands of Japanese soldiers who exclusively monopolize the labor of the California lemon orchards, thus depriving American laborers of opportunity of labor and wages.'

"The lecturer is the paid representative of New York lemon merchants, whose business has materially suffered by the increase of duty from 1 cent to 1½ cents a pound. He has a small table and many big bundles of petition blanks, and displays large posters, printed in red and blue ink. Ceaselessly he and his assistants descanted on the evils of the lemon tariff.

"'Sign a petition to Congress,' cried one of the orators. 'It costs nothing. You could get six lemons for 5 cents, but now you get only two for a nickel. The tariff is to blame for high prices. Don't you want cheaper lemons, cheaper lemonade, and cheaper lemon ice cream?'

"To those who stopped to speak to the lecturer in chief he explained that last year the lemon imports from Italy amounted to 150,410,536 pounds, of a value of $3,072,735, and that the duty collected on them was $2,256,158. One and a half cents per pound duty, he asserted, is equivalent to about 74 per cent. ad valorem, although diamonds—articles of luxury—pay only 10 per cent.

"Some of the men who signed petitions yesterday were from California, the home of the lemon growers.

"The New York lemon merchants are trying to get a free lemon amendment on the Farmers' Free List bill, which is in conference, and are urging their Congressmen to take the matter up.

"Congressman Francis Burton Harrison, a member of the House Ways and Means Committee, has sent this letter to a constituent:

"'I am very glad to have your recent communication about a reduction in the duty on lemons. I am heartily in favor of having the duty reduced on this necessary of life. I spoke against the raise in the duty on lemons in the last tariff revision, and voted against it, and am now doing all I can to get a lower duty.

"'There is no single item in the whole tariff which shows more clearly the iniquitous workings of a high protective tariff. The purpose in the raise in the duty was simply to give the California lemon growers exclusive control of the markets of the East, especially New York City, so they might be able to charge the poor people in New York a higher price for lemons.

"'You must do everything in your power to keep this question before the public and thus help your Representative to get the duty reduced.'

"Most of the New York Congressmen are interested in getting the duty reduced."

NONE TOO EARLY.

We received a circular recently in which the catch phrase was used "$75,000,000 reward for the capture of Jack Frost." It was simply one way of stating the fearful loss which comes from the visit of this dreaded foe of all kinds of fruit and practically all farm products. Will we have an early frost? Will we have a late frost? are questions of every fall and spring. Citrus growers and those handling products of semi-tropical countries not only have the early and late frosts to contend with, but lowering of temperature at any time in the winter strikes terror to their hearts.

Fortunately the last few years have seen the question of frost conditions more fully investigated. Still more, they have seen orchardists in a more or less effective way making efforts to control its ravages. These efforts have led to several different "systems" of frost fighting. Almost all of these are good, some are better, and a little investigation can be made at this season of the year to learn what is of most value to the orchardist and aid him in claiming part of the $75,000,000 reward. There is absolutely no question in the minds of intelligent orchardists that good effects have been obtained by the use of these systems.

The expense of fitting the orchards to combat the cold still prevents many from protecting themselves. Some years there is no occasion for it, so the careless grower prefers to gamble on the proposition, and if the frost comes he pockets his chagrin instead of the coin he should have had. Already orders are being taken for next season's pots and stoves, and it is none too early, for everyone who is not already supplied to begin to make careful investigation.

GENERAL CROP CONDITIONS.

On August 9th the Crop Reporting Board at Washington reported general crop conditions as fairly favorable, at least more so than might be anticipated in consideration of the intense heat of late June and early July. The report is made up of estimates from correspondents and agents of the bureau scattered over the country, and from these corn shows a condition of 69.6 of normal, which is less than 10 per cent decline from last year, but is a very great decline from conditions obtaining on July 1st. On that date it was reported as being 80.1 per cent of normal. The acreage this year is in excess of last year's by 1.7 per cent, making a total of 115,939,000 acres.

Barley shows a better average condition, being 66.20 as compared with 70 per cent last year. The acreage, however, has declined, being only 97 per cent of normal. The total barley acreage in the United States is 7,038,000.

Potatoes are also decidedly off, showing a condition of only 62.3 as compared with 75.8 last year, or still worse, 84.8 for the ten-year average. The acreage is also slightly under average, or 97.3, a total of 3,495,000 acres for 1911.

The condition of apples is 47.8, while the ten-year average is 53. The falling off in condition during the month of July was 4 per cent.

If the percentages prove correct, it will indicate that corn will yield 22.6 bushels to the acre, barley 19.8 bushels, potatoes 72.5 bushels. Preliminary estimates now being made indicate that winter wheat will yield 14.5 bushels per acre. This will make a total for the country of 455,149,000 bushels. This is about 10,000,000 bushels under last year's production, but better than the five-year average. The quality of winter wheat is slightly lower than last year, being 92 per cent as against 92.6.

DON'T.

Touching upon forest fires and good points to observe to put them out before they are started, may we suggest:

Don't toss away burning matches or tobacco.

Don't make a campfire in leaves, rotten wood, or against logs, where it may spread or where you cannot be sure it is out.

Never leave a fire until it is out.

Don't burn a slashing in the dry season without a permit and without taking care to keep the fire from getting away.

Put out any fire you find if you can. If you can't, notify a fire warden, some other public officer, or the land owner."

JAFFA AT GARDENA.

At the farmers institute to be held at Gardena next Monday, August 21st, Prof. M. E. Jaffa of the State University will make an address on the topic of poultry feeding. Prof. Jaffa is one of the best informed men on the scientific side of poultry culture in this state, and we doubt not poultrymen from many parts of Southern California will attend. The meetings will be held in the Agricultural High school, and it is understood Prof. Jaffa's address will be in the afternoon beginning at 1:30.

It is a fact well known, now, that speculators in Palermo, Sicily, and in New York City, joined hands to secure the reduction in the lemon tariff which in 1910 paid into the U. S. treasury the very respectable sum of $2,223,527.87, as compared with collections of $1,351,758.88 for 1909, the year before the tariff went into effect.

One of the Cultivator's exchanges recently appealing for more attention to good roads, good roadsides and well-kept places on the ground that these are valuable assets to any community, states that progress is contagious. Nothing truer could have been said and the owner who keeps his place in good order shows pride in his community and accomplishes more than good to his immediate surroundings, for his example will be followed by others.

Agricultural News Notes of the Pacific Coast

Northern California

Chico, Butte County, reports its biggest crop of hay.

Healdsburg prune growers are propping heavily laden trees.

Preparations are being made to organize an irrigation district.

The Sebastopol cannery has a large force of hands canning berries.

Extensive levee improvement is planned for Sutter County below Yuba City.

One Meridian, Sutter County, barley grower has sold his crop of barley at $1.25.

The Ehman Olive Co. of Oroville, Butte County, is shipping olives to France.

The Gravenstein Apple Show at Sebastopol is to be opened by Luther Burbank.

A pumping plant has been installed at Colusa which will irrigate over 100 acres of orchard.

El Dorado County fruit growers are shipping heavily and receiving most satisfactory prices.

A fruit grower at Loomis, Placer County, nets $647 from one and one-third acres of Burbank plums.

Eight thousand acres of fine land of Tehama County has been recently purchased and will be subdivided.

The largest dairy in District No. 70 in Sutter County is about to be established by Marin County capitalists.

Much trouble has been experienced with strikers at the Crockett plant of the Hawaiian Sugar Refining Company.

Sonoma County Japanese fruit growers have raised $600 to aid in making an exhibit at the coming Gravenstein Apple Show.

Horticultural Commissioner Galloway of Sonoma County urges immediate spraying for the last brood of codling moth.

Large shipments of Crawfords and Tuscan Clings are being made from Marysville and other points in Yuba and Sutter Counties.

It has been announced that bottom lands along the Bear river near Rio Oso, Yuba County, will soon be subdivided into small tracts.

The peach orchards near Bogue, Sutter County, are presenting a busy scene, much of the fruit being shipped to the cannery at Fruitvale.

Contra Costa County people are discussing the formation of a promotion organization which will look after the best interests of that county.

Shasta County hop growers are elated over present market indications and are even hoping for a 30-cent price before the season ends.

An irrigation scheme is under way near Lakeport, Lake County, which contemplates the impounding of sufficient water for irrigating 16,000 acres of land.

Chico, Butte County, claims the largest oak tree in the world, located on the Bidwell estate. Its height is 150 feet, and the branches have a spread of more than 200 feet.

The increase in fruit shipments from Bogue and other points in Sutter County has brought a promise from the railroad company to give increased freight shipping facilities.

Central California

The shipment of Malagas has begun from Fresno.

Tokays are ripening very rapidly in the Lodi District.

Merced reports great increase in acreage of alfalfa.

Stockton has ambitions to become a great poultry center.

Turlock plans a two-day melon carnival August 24 and 25.

The big potato fair celebration at Salinas proved an immense success.

San Joaquin Thompson Seedless grapes now arriving in Chicago find a good market.

Wineries at Las Palmas, La Paloma, Lodi and Elk Grove have merged into a million dollar corporation.

The state dairy inspector on a recent visit to Kings County caused the arrest of several Portuguese dairymen.

Wine grape growers and wine men of the valley have united to conduct a campaign in the interests of the wine industry.

Some orchards of the Santa Clara Valley show exceptionally good results from spraying with lime solution for the thrips.

Diseased squirrels have been found in the Tule River Reservation, and it is feared that some may be infested with the plague.

A prune carnival will be held in connection with an annual industrial exposition to be held at San Jose, September 14 to 23.

The California Fruit Canners' Association has been paying to Selma orchardists 10 cents for 1911 peaches and 4½ cents for raisins.

California Fish and Game Commission will investigate the matter of deer killing and the advantage of protection of this game in the state.

The horticultural commissioner of Fresno County is keeping close watch on all alfalfa fields to discover any possible infestation of alfalfa leaf weevil.

Fresno finds damp and cool weather delaying the maturing of grapes and the picking of Malagas was stopped last week because of much green fruit.

Valencia oranges are all shipped from Lindsay and packing houses are closed. The coming Navel crop promises to be rather larger than last year's.

Salmon are reported in the Kings River where they were unknown three or more years ago. The irrigation weirs have created better conditions for them.

The Watsonville Apple Annual management estimates that last year's show, which was a great one, will be distanced in quantity and quality of exhibits this year.

The Zante Citrus Association has elected officers for the coming year as follows: W. L. Hemphill, Pres., W. H. Grant, Secretary and Manager; other directors, A. M. Lumley, Geo. Hall, G. S. Langford, G. H. Vosburg.

The city of Los Angeles now has an inspector at Tulare keeping tab on the various shipments of cream. He has given warning that if dairy products are shipped without observation of rules, they will be dumped on arrival in Los Angeles.

Southern California

San Diego will build a produce market at a cost of $80,000.

Santa Ana apricot growers and dryers have paid out over $80,000 for labor of gathering and cutting fruit.

The largest well in the valley is being bored at Perris, Riverside County. It is twenty-four inches in diameter.

The orange packing house formerly used by the California Citrus Union at Redlands burned last week, loss $13,000.

A corporation has been organized to bring under cultivation 20,000 acres in Piute Valley, San Bernardino County.

Almost 3000 cars of cantaloupes were shipped out of Imperial Valley. This is approximately 1000 more than last year.

Santa Paula fruit growers are planning to build levees which will keep Santa Paula creek within its banks at flood time.

Skeletons of many deer have been found in the burned area of the great forest fire in the San Bernardino mountains.

Sugar beet growers near Fullerton, Orange County, have had trouble with laborers demanding excessive prices for harvesting.

Horticultural Commissioner Bishop of Orange County is making an effort to rid the county of Johnson grass and morning glory.

The Valley of the Yucaipa in San Bernardino County reports greater quantity and finer quality of apples than any preceding year.

Orange County reports that an excellent crop of apricots has been dried and that a $300,000 crop is now in the bins ready for the market.

That the flood season of the Colorado has passed was emphatically proved on one day recently when the river receded one foot in 24 hours.

Peter P. Hovley of Brawley is taking early steps to more thoroughly organize the cantaloupe growers for the handling of next season's crop.

The appropriation by the last legislature will enable the pathological laboratory at Whittier to make greater research for the benefit of the fruit industry.

The stones were hardly cold on the slopes of the San Bernardino mountains when the forest service began making plans for replanting the burned area.

The apricot canning season ended recently at the Colton cannery, over 700 tons of cots having been handled. This was 100 tons in advance of last year's output.

Riverside claims the record breaking sunflower, the head 30 inches across and the seed bearing center 17½ inches in diameter. The stalk was 11 feet tall.

Imperial Valley is estimating that three quarters of a million dollars worth of lint will be gathered in the fields of the valley this year. The picking is just beginning.

Volunteer cotton crop of the Imperial valley has been declared to be a success and doubtless another year there will be greater attention to this manner of growing cotton.

The Coast

Grain growers at Lewiston, Idaho, are busy with harvesting.

Lewiston, Idaho, has a field of grain which it is asserted stands nine feet high.

Many new varieties of long fiber cotton are being grown near Yuma, Arizona.

The siphon to carry the waters of the Colorado under the bed of the stream to lands above Yuma is nearing completion.

Grape growers near Yuma, are planning the construction of a grape juice processing plant.

The twenty-first annual district fair will be held at The Dalles, Oregon, October 3-6.

The fruit acreage of Okanogan County, Washington, has doubled during the past year.

The Governor of Hawaii has appointed Chas. S. Judd as commissioner of public land.

A county fair is assured at Klamath Falls, Oregon, and will be held the first week in October.

An agricultural school is to be established in the Lanao District in the Island of Mindanao, P. I.

The Prune Fair and Carnival planned to be held at Dallas, Oregon, is to be held during September.

A movement is on foot to introduce to the Hawaiian Islands insectivorous birds to aid in the fight on the many pests.

Plans are being formed for the Second Annual Apple Show under the auspices of the Eugene, Oregon, Commercial Club.

The output of the Oregon hop fields will be from 95,000 to 100,000 bales, and it is expected the crop will bring to the state $5,500,000.

A hop buyer at Chehallis, Washington, has just purchased ten tons of 1911 hops at 30 cents. The Chehallis crop will be about 2000 bales.

The aggregate increase of the value of livestock of the state of Nevada during the last decade was $6,000,000, an increase of over 54 per cent.

Hot winds over many parts of the state of Washington caused some injury to wheat fields, variously estimated at from eight to ten per cent.

The Annual Apple Show for Oregon will be held at Portland, November 15-17. In connection with it will be held a meeting of the state horticultural society.

Loganberry growers at Salem, Oregon, have good contracts with dryers and it is predicted that loganberry planting will be greatly extended another year.

A large sugar estate near Manila, Philippine Islands, has just received from the states 4,000,000 pesos to be used in the development and extension of the estate.

People at Fairbanks, Alaska, enjoy the luxury of eating strawberries at $2.00 per box, though some bargain days have been announced with the ordinary pound box selling at $1.50.

Mrs. Littlepage, a soil and irrigation expert of the Department of Agriculture, said to be the only woman expert in these lines, is investigating conditions near Klamath Falls, Oregon.

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Profit in the Poultry Yard

Practical poultry people who may have ideas from their experience as to methods of feeding and housing and general care of poultry will confer a favor upon the Cultivator and its circle of readers by sending in concise accounts. Mrs. Basley is always willing to answer queries, which with the experience of others should make this a most valuable feature in poultry life on the Coast. Opinions or matters of a personal nature should be omitted, but a concise statement of facts is always valuable.

MORE ABOUT DUCKS.

By Mrs. A. Basley.

Indian Runners are exceedingly easy to raise, being ready for the market at ten weeks of age and commencing to lay at four and a half months when hatched early. In writing about them seven years ago when I had a fine stock of them I said "I hatch under hens, remove to brooders, give them heat for only a week or ten days (according to the weather) they do better in the brooder than with hens, as the hen often treads on them or knocks them over by scratching. I find that more fertile eggs hatch under hens than in incubator. I heard of an eastern duck breeder who advocates putting duck eggs into an incubator for six days, then testing the eggs and placing the fertile eggs under hens, refilling the incubator with hen's eggs immediately till about two days before hatching time when he changes, again putting the duck eggs into the incubator for the hatching time and giving the hen eggs to the hens to hatch out. He claimed that by this means he got an eighty per cent hatch of duck eggs whilst most of the large duck farms in the East get only sixty per cent hatches in the incubator. A sixty per cent hatch in the incubator and eighty-five to ninety per cent under hens was my average for ducks. I do not know why they hatch better under hens. It may be that the perspiration of the hen being both oily and acid has something to do with it." You can tell by the smell and feel of the feathers of the hen that it is a peculiar perspiration and I think it assists the eggs to hatch. I wish someone more learned than I could discover why hens hatch so much larger per cent of duck eggs than incubators do. Duck eggs, of course, require different handling in the incubator to hen's eggs, more ventilation, more cooling off and drying out and also sprinkling with warm water, but even with all this extra trouble they do not hatch as many as under hens.

Now about the food for mature ducks. Green food and animal food are necessities. In the East where the ducks have a good range on grass they will find all the greens they need, but here the lack of green has caused many a failure. An alfalfa range in California is the best for ducks (and for geese also). They find ample supply of green food and the insects which abound in the alfalfa form a valuable addition to the animal food. In the wild state ducks would find quantities of grubs, bugs and worms, which supply the meat needed, but in California during the dry hot summer there is a great scarcity of worms and insects and consequently meat in some form must be fed.

The dry blood or meat meal mixed in the mash will answer as well as meat, but the most successful that I have known was a lady living on an alfalfa ranch, where the artesian water always flows. Small frogs and tadpoles abound and the ducks almost live off of them. The little food she gave them at night in mash to bring them up to the yard where they were kept at night, did not cost two cents per month per duck. She kept them in at night to protect them from the coyotes and also to gather the eggs in the morning, or they would have gone down to the water to lay them by day break. Ducks lay their eggs either in the night or very early in the morning and they are not at all particular where they lay them. I had, however, one duck that preferred to lay in a trapnest and she would wait more patiently than a hen for me to let her out.

This land cleared $67.50 in five months with ten ducks. Indian Runner ducks are small feeders in comparison to Pekins. They lay over two hundred eggs per year, looking like and tasting like a hen's egg, not strong like other duck eggs, and bring the same price in the market, though my friend above mentioned always received five cents per dozen more for them than for hen's eggs. Her customers used to beg for them in preference to any other kind; they said they were better flavored.

Indian Runners are easy to keep, are light feeders consuming less food than Pekins although laying continuously. By actual test I found that it required no more food for a flock of Indian Runners than for the same number of White Plymouth Rocks and if allowed free range on alfalfa or where they can find plenty of grubs, bugs, worms, or small frogs which they delight in hunting, they will make their own living. While they do best on free range they bear confinement well and can be kept in very small yards. They are ready for market as soon as the Pekin, that is, at ten weeks of age, and when they have reached a marketable age they have nearly attained their growth and have little left to do but to complete their plumage and begin to lay. Their wonderful laying qualities insure a constant supply of eggs the year around except from four to six weeks in the fall and when they are moulting. However at this season the late hatched ducks assume the work while their mothers are taking a needed rest.

The following feeding for ducklings is from men experienced in the business who are or have made fortunes with ducks:

(1) Ration for ducklings (Rankin): The first three or four days, one part hard boiled egg, three parts stale bread crumbs; after that equal parts of corn meal and wheat bran, boiled potatoes and a little beef scrap.

(2) Rations for ducklings (Hallock): First week, equal parts of cornmeal, middlings, crackers or stale bread, and green stuff; mix in a small handful of sand to each quart of food. Give occasionally bread soaked in milk for a change. Second week, four parts cornmeal, two parts wheat bran, two

parts middlings and one part beef scraps, sand; mix with one-third of the quantity of green stuff. At about six weeks put ducks in fattening pens, and feed two-thirds meal, the remainder about equal parts bran, middlings and greens; add about twelve per cent of the whole of beef scraps.

(3) Rations for breeding birds, young and old. (Rankin): During the summer and fall when they are not laying, feed three parts of wheat bran, one part Quaker oat feed, one part cornmeal, five per cent beef scraps ground fine and five per cent of grit, and all the green feed they will eat cut fine. Feed this mixture twice a day all they will eat.

(4) Ration for laying ducks. (Rankin): Equal parts of wheat bran and cornmeal, twenty per cent of Quaker oat feed, ten per cent of boiled turnips or potatoes, fifteen per cent of clover, alfalfa or refuse cabbage chopped fine, and five per cent of grit. Feed twice a day all they will eat.

There is one secret that the big duck men do not reveal, a secret for getting eggs, and that is, the ducks must have a plentiful supply of crushed clam shell before them at all times as well as fine grit. The most available shell, that is the shell that is most readily digested and turned into egg shell, is not the hard white shell, but the small pink or bluish clam. It is simply marvellous the effect that this clam shell has in persuading the ducks to shell out eggs. The lady I mentioned who made so much from her ducks knew a man who had a clam extract factory and from him used to buy the refuse shell after the juice had been extracted.

Another important part is the grit or sand. This is very essential for without it the ducks will die of indigestion. Cleanliness also is a necessity, especially for yarded ducks, and shade. The only illness I have met with here in the duck family has been from lack of shade, and from ducks having too shallow drinking vessels. In the first case the ducks had a kind of blind staggers and quite a number died. In the latter case the ducks' heads swelled up and the eyes became inflamed and closed up, because they had not been able to rinse out their nostrils.

The profits on ducks depends on how much feed has to be bought for them in the first place. If you have an alfalfa field, one sack of bran and cornmeal lasts a year, the profits would be immense. Then are you near enough to a good market? So much depends upon how you can sell and what you have to buy.

You can distinguish the sexes when they are about six or eight weeks old by the voice. The females "quack" loudly, while the male's voice sounds as if he had a sore throat, a sort of cross between a hiss and a whistle. The Fawn and White Indian Runners feather alike at first, so you get no help there in discovering the sexes. When young the males are sometimes longer in body and larger, as they also are when mature but all these signs are unreliable and the only certainty is the appearance of the curled feathers in the tail which appear at 12 to 14 weeks.

The English Standard for the Indian Runners is an entire pamphlet and it is difficult to pick out the chief points briefly, but a few hints will help.

The disqualifications are: Blue wing bars, claret breasts, distinctly bright green heads (like Rouen or Mallards) wry tails. All weights above 5 lbs. for females and five and a half for drakes and below three pounds for females and three and a half for males.

Length is greatly desired, 25 to 30 inches in ducks and 28 to 36 inches in males being considered good. The neck must especially be long, thin and fine; bill light orange yellow when young, the green spots which appear later changing to dull cucumber color in ducks and greenish yellow in drakes, when over a year old. Head flattened over the skull and eyes high up in head; bill wedge shaped, straight and fitting into the skull without any dishing; body tapers to behind shoulders and again as it nears the tail; legs must be placed well back, clear orange red as far as possible.

Color of cap and cheek dull bronzy green; neck white to where expansion begins. Body color soft warm ginger fawn, uniform to the skin, penciled for females on a shade of fawn not quite so bright. The penciling is to be rather indistinct, but is more plain on back and shoulders. The male a soft fawn peppered with a warmer shade. Pure white in flights is counted desirable, but is not insisted upon. Light clayey lacing and bold prominent lacing to be avoided.

Height, reach and a racy look characterize the breed. The chief aim of the English Standard is to condemn anything that leans toward Mallard or Rouen type and to keep the traits which make the Indian Runner distinctive or different from all others. Eggs are large and white.

A straight line from head down back to tail shows a good Runner, especially not having curves or angle at back of neck (a sign of Mallard blood). A short thick neck is considered very defective.

CARE OF GOSLINGS.

Goslings should be left in the nest or incubator for twenty-four hours after hatching, then fed with light bread soaked in sweet milk and young, tender grass cut up fine and mixed with it. If they will not eat it, open their mouths and teach them to eat it. Many are lost if left to learn alone, or are put out with their mothers until they can eat. Scatter blades of short grass among them, and they will soon learn to pick it up. Two or three feeds will usually teach them and save you many dollars. After they learn to eat this, feed unsifted cornmeal and bran.

Keep the mother indoors until the dew is off the ground, after which confine her to a small pasture if possible, as she will tire the young goslings by walking too far. Do not let them get chilled or get caught out in a heavy rain, for they are much more easily drowned than chickens. Exposure to cold, damp weather and wet coops will give them rheumatism. Plenty of grass and water are necessary, with a little grain, until the time for fattening arrives in the fall.—Journal of Agriculture.

LICE.

That lice are still playing havoc among the flocks of young chicks is evident from the number of inquiries we are receiving about how best to exterminate the pests. Again and again

"The Best Place in California to Buy Groceries is Los Angeles"

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is selling not only groceries, but everything to eat, wear and use at wonderfully low prices, actually saving the consumer the difference between the retailers' and the wholesalers' prices even after the freight is paid.

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Name. Address.	Our Price	Their Price.	Net Saving after paying freight.	Per Cent Net.
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G. R. S.—Covina	15.64	18.44	2.44	15
W. H. P.—Banning	38.28	59.30	18.32	31
J. B. —Corcoran	14.90	21.90	4.63	48
C. E. S.—Duarte	11.11	14.35	2.89	20
A. R. H.—Aberdeen	21.28	32.51	4.62	22
C. B. S.—Tulare	29.58	39.55	6.12	15½
A. K. Y.—Perris	21.54	25.78	2.89	14

We could give many other instances similar to this, but lack of space forbids. It should be taken into consideration also that these savings are based on Groceries only, which are, as a general rule, sold close. Many of our other lines will show still larger savings.

Grocery Bargains

On page 135 in last week's Cultivator will be found more than a half hundred items in groceries and other lines which your neighbors are buying from us at wholesale prices—Why not you?

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in these pages have we told the readers how to keep the lice in check, but not until the chicks die do they pay attention to what was told them. The great secret about the lice problem is to have perfect cleanliness around the coops and premises, and by thus forestalling them the lice will not bother so much. After they do get a foothold, then there is only the most heroic treatment of whitewash, kerosene emulsion and carbolic acid to fall back upon, and this must be done quite often to keep them in check.—Kansas Farmer.

Kerosene emulsion is one of the best mixtures to use in combating mites in the poultry house. It is made by mixing two gallons of kerosene oil, one-half pound whale oil soap, or one quart home-made soft soap, and one gallon of water. Dissolve the soap by boiling in water, then remove from the fire and immediately add the kerosene. Beat this mixture rapidly and violently until the emulsion is as smooth as beaten cream. Bear in mind the vessel used in mixing this emulsion must be sufficiently large to hold a considerable increase in measure, as the bulk is nearly or quite doubled in emulsifying. One part of emulsion to seven parts of water is used to dilute the mixture for application to buildings, drop boards or nest boxes. Add one or two ounces of carbolic acid to the diluted emulsion just before applying. This is a splendid disinfectant and insecticide to use about the poultry houses.

Experiments show that exciting the hens, worrying them in any way, or running after them, retards the production of eggs. Scientists have found that an egg may be nearly developed and that excitement or moving will cause it to be re-absorbed by the hen's system. This proves that the hen in the laying pen should be kept as quiet as possible. The attendant should be careful not to disturb the birds any more than possible. Children should not be allowed to chase the hens all over the yard, and dogs should be kept away from them. In a number of tests it has been found that birds which were kept in back lots, away from the noise and excitement, produced more eggs than those kept where there was more noise, all else being equal.

ENSILAGE IN SUB-TROPICAL COUNTRIES.

(Continued from Page 151.)

sured. However, when very high silos are used and the cut material is quite green, the pressure near the bottom sometimes becomes sufficient to press out the juice. This is to be avoided. The empty silo must be one-third higher than the column of ensilage it is to hold; and then it will require refilling two or three times at intervals of several days to have it finally three-fourths full.

Care must be taken in choosing a well drained place for the silo. It is scarcely necessary to add that the silo should be placed so as to economize labor in feeding. It must be remembered, however, that the odor of ensilage is rapidly absorbed by milk; and, therefore, the silo should not be directly in the feeding room, nor should ensilage be fed immediately before or during milking.

The Ensilage.

Most crops with solid stems are suitable for ensilage, but those with hollow stems carry so much air into the silo that the ensilage does not keep well, although very green hay has been successfully siloed with cow peas. The material used must not be too moist, or the temperature of the first fermentation will not be high enough to destroy those germs that cause excessive acid fermentation, and the ensilage will be too sour. If not moist enough, air is apt to find entrance, resulting in moulding and decay of the entire mass. If crops are too green and moist they should be wilted before being siloed; and, vice versa, if too dry, a little water should be sprinkled over the cut material. By observing these points, even alfalfa and overripe corn have been successfully siloed. The loss of nutritive matter during the fermenting process depends largely upon the exactness with which these conditions are obtained. In the poorly prepared pit silo this loss may attain forty per cent or more, while in the well prepared round silo the loss may not exceed five or ten per cent.

The fodder may be chopped or shredded by any of the ensilage cutters found on the market. The cut material which is carried into the silo by an endless belt elevator or by a blower should be well distributed. A cone of chopped fodder must not be allowed to accumulate in the center, as this tends to sort the ensilage into coarser and finer portions. The weight of the cut material will usually be sufficient to pack the center. It is essential to tramp the edges well, since the material is apt to shrink away from the walls and admit air, spoiling the ensilage on the edges. This is done best by a man tramping around the edge with his back to the wall. The corners in a square silo must be packed with special care. A covering of boards over the top is all that is usually found necessary to preserve the top layer; but the added protection of a layer of finely chopped straw or chaff will probably repay the labor. Some have even sown grain thickly over the top, which soon sprouts and forms a cover almost impervious to air.

At Boufarik, corn for ensilage is planted so thickly that no ears form. It is then cut soon after it has come into tassel. This practice is contrary to the best American usage in the corn belt, where the ears, which are left on the stalks, greatly improve the quality of the ensilage, since a large part of the nutritive material of the plant is in the ear. In this connection, it is well known that in dry countries corn is fertilized with great difficulty, and unless it comes in silk and tassel during humid weather very few grains are formed.

Beet Leaf and Top Ensilage.

Beet leaves and tops for ensilage should be freed of dirt and sand by washing, regardless of any losses such treatment may incur. They should be well drained and somewhat dried, but need not be chopped before being put into the silo.

This material sometimes contains as much as 3½ per cent of oxalic acid in the dry substance, of which one-half or more may be soluble in water. Oxalic acid has the property of withdrawing lime from other substances, with which it forms an insoluble oxalate. For that reason it is best not to feed beet leaves or beet leaf ensilage to growing stock, since it is apt to produce unduly soft bones by rendering insoluble the lime necessary for their nutrition. Even for mature animals, the oxalic acid should be rendered harmless by adding one or two pounds of slaked lime per ton of leaves and tops when they are siloed. Since beet leaf ensilage has marked laxative properties, it must be combined with a liberal amount of straw or other dry forage. It is best adapted for feeding steers, but may also be given to sheep. Dairy cows are said to prosper on it, provided it does not exceed one-third of the total ration.

Corn ensilage may be fed to most farm animals, but the best results will be obtained when fed to dairy cows, due to its favorable action on milk secretion. Sheep may be given ensilage with profit if sufficient other dry feed be provided, since they usually thrive best on a rather dry ration. Steers for shipping may be fattened to advantage on a ration composed largely of ensilage, but should be finally fed on drier feed so as to lose less in transportation.

In certain sections of semi-arid countries where dry farming can be practiced or flood waters utilized in growing corn and sorghum, the silo will probably be found to enable the feeder to use more advantageously the natural pasturages, which during part of the year produce more than enough forage for the herds and flocks that can be permanently maintained upon them.

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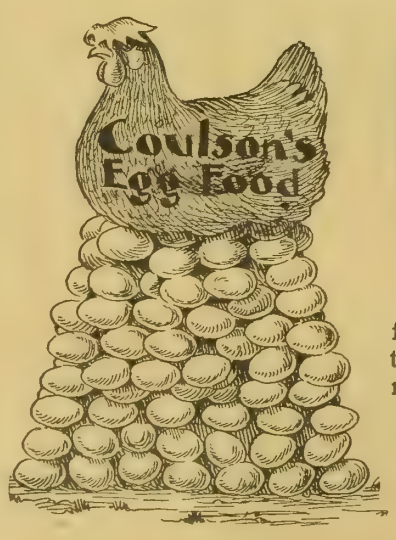

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Questions and Answers

THE EDITOR AND STAFF

Processing Exhibition Fruits.

Please give formula for preserving fruits in large display jars such as Chambers of Commerce exhibit. I have exceptionally fine peaches and wish to preserve them for display. I find your paper a great aid in my ranch work.—J. L. Dwinell, Anderson.

We regret that we cannot give very definite information as to preservatives for exhibition fruit. Mr. Wiggins, in charge of the Chamber of Commerce of Los Angeles, which is perhaps as successful in this work as anybody can be, said that he could not give explicit information to anyone; it is a trade or science in itself and, as he remarked, there are not six men in the state who are entirely successful at it. Different fruits require different treatment. The same fruit grown in different sections, the same fruit grown in the same section different years, are in different condition. Therefore experience only can dictate the exact procedure. But in a word, the base of the whole proposition is two ounces of sulphurous acid to each gallon of pure water. Unless the water is what is usually termed "soft" or has a lack of minerals, distilled water should be used. In any case, water should be boiled before adding the sulphurous acid. To this formula is sometimes added formalin to aid in preserving the natural color of the fruits; it also is a fruit preservative. Glycerin or salt is then added to change the specific gravity of the solution; glycerin anywhere from one to sixteen ounces to the gallon. The point is to make the solution of such density that the fruit will remain suspended without crowding either to the top or the bottom. Mr. Wiggins said that if he were going to handle Shasta County fruit he would have to do so after closest of inspection and watch it after placing it in solution, but he added that it would be wise for you to write the California Promotion Board at San Francisco which should be able to give you more explicit information as to handling of your fruits than could be done at this end of the state.

Chucawalla Valley.

Please give information regarding the Chucawalla Valley. What is the quality of the soil and quantity of water, price of land in different locations, prospects of a railroad and prospects of future development?—Subscriber, Los Angeles.

Chucawalla Valley lies in Eastern Riverside County a few miles from the Colorado River, and as a rule consists of excellent soil. There are some patches of the valley near the foothills in which rocky wash land may predominate. Near the center of the sink is a heavier soil. These soils are all of the nature of a silt deposit, and so far as they have been examined have been reported upon most favorably. It is generally believed that there is no alkali in the soils of the valley. It must be borne in mind, however, that there has been almost no development in this section and no crops have been produced. A company has been formed to lift the waters of the Colorado and carry them to this land in quantity sufficient to irrigate some 200,000 acres or more of land. As to its future or railroad facilities to come, only the wisest of prophets can tell. If water is placed upon the land, without question, it would be a rich empire. Promise is now of the best for conducting water to the land. Assignments have been made on the basis of $3.00 to as high as $10.00 per acre. Excepting a very few cases of state school lands, no direct sales have been made in the valley.

Dying Leaves of Plums.

I send leaves of plums showing brown around the edges. What is the trouble and treatment? Applied a solution of soap to them, but do not know as yet whether or not it will be of any value. These trees were planted last winter from the nursery. —Subscriber, Los Angeles.

The leaves had the appearance of having been burned about the edges and no indication of fungus. We are unable to determine from them what the trouble is, but are sure the "application of solution of soap" would be of no value for this trouble. If the brown appearance is caused by any fungus trouble the Bordeaux mixture would be the best remedy.

Apricot and Peach Vinegar.

Will some reader of the Cultivator tell me how to make vinegar from peelings and culls of apricots and peaches. How long should it stand before straining? Is it necessary to add sugar? If so, how much? Ranchers have enough cull fruit so that this should be interesting reading.—A. L. M., Hemet.

We hope our subscribers who may have had experience along this line will give pointers. We may say, however, that the addition of sugar is unnecessary, though rinsings from syrup kegs, washings of honey separators, and other refuse of that kind will make a valuable addition to the mass of peelings and mashed fruit. Cover the fruit with sufficient water to reach the top and allow to stand until thoroughly fermented when the liquid should be racked off. This liquid should then be placed in a cask which has an opening protected by thin cloth or mosquito bar to prevent access of insects and at the same time permit air to reach the liquid. In the course of a few months it will doubtless make a good grade of vinegar.

Alfalfa Between Young Orange Trees.

Can a 12-foot strip of alfalfa be grown between orange tree rows planted 22 feet apart, without injury to the tres up to the fourth or fifth years from planting?—A. W. S., Exeter.

Alfalfa is not an ideal crop to grow between orange trees for the reason that it requires water more continuously than do the roots of the trees and this prevents thorough warming of the soil. We note you say trees are 22 feet apart and there is to be a 12-foot strip of alfalfa, thus allowing five feet on each side of the rows of trees. This would perhaps be all right for a year or two and plainly would even benefit the soil by turning under roots and tops after making a few cuttings, but we fear the temptation would be to continue the alfalfa too long and thus prevent the fullest development of the young trees. Orange trees require a warm, well-drained soil.

Topping Eucalyptus.

At what time should I cut my year-old eucalyptus row in order to grow straight and strong trees suitable for roadside?—A. W. S., Exeter.

We hardly get the point from the inquiry, but suppose questioner wishes to top back his trees in order to make stockier trunks. When to do it will depend somewhat upon the growth of the trees. For roadside trees the branches should be fairly high so as not to interfere with travel past them. They may be made straight by fastening to strong stakes. As to the season of the year for cutting, would prefer the spring just before they start new growth.

Weevil in Beans.

Please give information as to how to keep bugs from getting into beans. —Subscriber, Pasadena.

The only way to keep the bugs from getting in is to store in perfectly insect tight vessels or bins, but even then some of the weevils may be in the beans when brought from the field. To destroy those which are in the stock at this time the beans may be placed in tight bins and fumigated by using bisulphide of carbon, one pint to 1000 cubic feet. Set in a dish on top of the seed to be treated, close bin and leave for 24 hours or more. Keep light or fire away from this liquid, as it is very explosive.

Grub Eating Asters.

What will kill the insects that eat the roots of asters as they begin to bloom?—Subscriber, Pasadena.

We will ask our subscribers who have had experience to give us answer to the above. We may say that it is extremely hard to handle grubs and other pests of the soil. Any liquid or gas treatment which will cause death of the pests will usually also kill the plants.

Onion Thrips.

What is the trouble with onion tops which I enclose and what is the treatment?—C. M., Arroyo Grande.

The tops have the appearance of being infested with onion thrips. Spray with kerosene emulsion made as follows: kerosene 20 gallons, whale oil soap five pounds, water 10 gallons. Directions for mixing may be seen in Cultivator of November 3, 1910. Application of a very weak Bordeaux mixture is said to be an excellent repellent. By very weak we mean 3-5-50 formula.

Apricot Scab—Smut.

I send couple of apricots, one showing scab and the other affected with a black smut. What is the matter and what should I do to prevent the trouble?—Mrs. L., San Gabriel.

The one fruit scarred with the scab may be treated with the self-boiled sulphur-lime mixture. That works with peaches and doubtless would with apricots, but as a rule this trouble has not been sufficient to call for spraying. The black smut or sooty appearance of the other fruit is caused by black or apricot scale or possibly by aphis which may be infesting the tree. We assume that it is the scale. It should be treated when the trees are dormant by spraying with strong distillate emulsion in a preparation of 12 gallons to 200 gallons of water. This should be applied as soon as the leaves fall.

Amount of Sulphur.

Please give amount of sulphur to use in curing apricots and peaches.—Subscriber, Mulberry.

For apricots approximately five pounds to the ton; peaches, seven pounds. Subject to the fumes about two hours.

Crows Eating Watermelons.

What shall I do to get rid of crows

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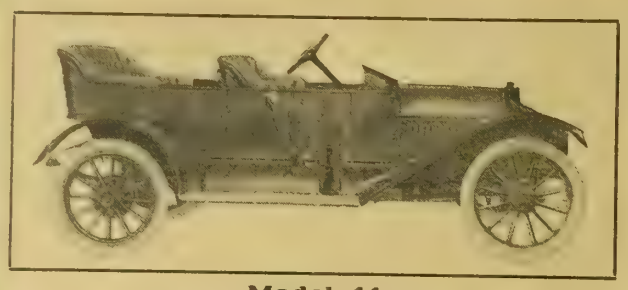

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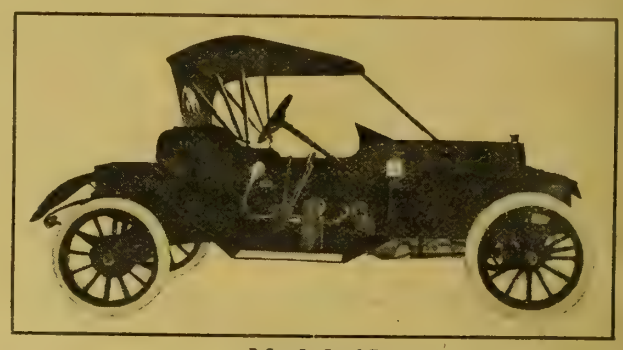


Model 43

ARNOTT QUALITY GUARANTEED ARNOTT & CO. INC. 112-118 S. LOS ANGELES ST., LOS ANGELES, CALIF. ARNOTT QUALITY GUARANTEED

that are eating watermelons? Have tried poisoning, scarecrows, dead crows on poles and all over the field, but everything failed. The only thing that succeeds is a shotgun in the hands of a marksman—Subscriber, Neenach.

We are unable to suggest anything further and will ask our subscribers to help. While the crows in this case seem to be an unmitigated nuisance, there are times when they prove beneficial in destroying insects and small four-footed pests.

Suitable Pears and Figs.

Is there any kind of a pear that will thrive in gravelly unirrigated soil, one that is of some value in the markets?

Is there any fig tree bearing white fruit that is good to dry, that ripens earlier than the Adriatic? This fruit comes along about Nov. first and is almost always spoiled by rain. If there is no white fig, is there a black one that can be dried and disposed of, or sold fresh?—Subscriber, Campbell.

Beurre d'Anjou is a good late pear, large size and was a prolific bearer at the old Pomona Experiment Station on the most gravelly soil they had. The fruit is large and comes in when pears are scarce. Cole is another good pear for sandy soil.

There is no good drying fig besides the White Adriatic except the Smyrna or Calimyrna. The California mission black fig is a good drying fig and is gone two or three weeks before the Adriatic is out of the way. While this fig has not been in favor as a dried fruit until the last few years, it is becoming more popular every year. Last season the packers paid one-half cent a pound more for it than they did for White Adriatic. If quality will cut any figure in the demand for dried figs, the California Mission black fig will stand next to the Smyrna.—J. W. M.

Farmers of the Island of Oahu, H. I., are raising a purse to send an entomologist in search of natural enemies of the Mediterranean fruit fly.

The water level in the artesian belt section near San Bernardino is 4.58 feet higher than last year.

Legal

Edw. L. Payne, attorney, 301-304 Douglas Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Payne is paid. When replies are wished in Cultivator address query to 115½ N. Broadway. Los Angeles.

Collecting Wages.

A bales B's hay; B pays A in full for baling. A fails or refuses to pay the men who performed the labor. Can the men collect their pay from B?—Reader, Porterville.

If the men who performed the labor were employed by A and not by B, they have no claim on B.—E. L. P.

Will—Divorce.

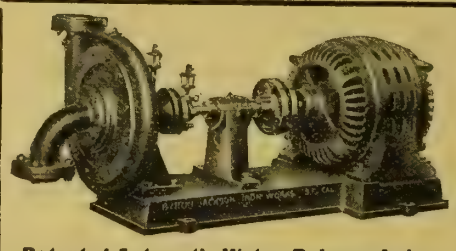
Can a married man or woman will his or her separate property to whomever they wish? How long does an applicant for divorce have to be a resident of the county in which divorce is applied for?—H. H., Lindsay.

Yes, a person married or unmarried, may will his property to whomsoever he desires. The applicant must be a resident of the county in which the complaint is filed for three months prior thereto.—E. L. P.

Filing Rights After Relinquishment.

I have filed a homestead claim of 120 acres, but I find that when surveyed, it does not take in a spring, as I thought it did. I tried to amend my application, but am told by the commissioner that I cannot, as I declared that I had been over and knew the land. Can I give a relinquishment on the claim and immediately file on the quarter sections I want?—Reader, Brice.

I do not find any provision permitting one who has relinquished a homestead to file on another homestead. However, as this is a matter of importance, I would suggest that if the inquirer has any intention of relinquishing his present holding that he first take up the matter with some attorney who makes a specialty of the law concerning government lands.—E. L. P.



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A. E. Nelson El Monte, Cal.

Homesteading.

Is yearly proof of work done on homestead necessary in all homesteading?—B. F. B., Valyermo.

Yearly proof is not necessary in the case of a homestead. To acquire a valid right under the homestead law, the settler must actually occupy the land in absolute good faith with the intention of permanently residing thereon; such occupation must be evidenced by those things which are essential to its beneficial use.—E. L. P.

Protecting Crops from Birds.

Is it against the law of California to kill any but the English sparrows? Is the placing out of poisons to destroy birds permissible?—F. M. D., Covina.

The law does not prohibit the killing of a meadow lark or robin or other wild bird by the owner or tenant of any premises where such bird is found destroying berries, fruit or crops growing on such premises, but the birds so killed shall not be shipped or sold.—E. L. P.

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In this department we will insert your advertisement under a classified head for 1½ cents per word per issue. No ad accepted for less than 25 cents. Our classified columns are the clearing house for our many thousand readers.

LIVE STOCK

Stallions for Sale—Acclimated animals. All harness broken, sound and gentle. Leader 40637. Dapple gray, 8 yrs. old. Ladoga Leon, 66619, 2 years old. Dark gray. Dam weighs a ton. Liberty 74310. Black yearling. These three are registered in the Percheron Society of America. Atwood, bay carriage stallion, 2 yrs. old. Solid color. Sired by Athadon, 1st dam by Junio, son of Electioneer. McKinney Don, 2 yrs. old. Solid bay with black points. Sire Stanford McKinney. 1st dam Belladonna, standard by trotting record. 2nd dam by Athaneer. Both well broken to buggy. Minnewawa Stock Farm, Fresno, Cal.

Three Imported Stallions, taken on a debt; no use for them; sell or trade one or all, half their value. 8 year, 1850 pound Black Belgian, $1500; 8 year 1400 pound Black German Coach, $1000; 4 year, 1700 pound Black Belgian, $1500. C. W. Brockman, 5101 S. Main St., Los Angeles, Cal.

For Sale—Imported coach stallion, Registered No. 4113. In his prime, sound, kind and stylish. Guaranteed. Colts of the finest type to show. Dr. Fred G. Matthews, 1232 Central Ave., Los Angeles. Both phones.

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For Sale—A complete Rabbitry, 1000 rabbits, New Zealand, Belgian, Angora, English, Black Russian and Flemish, old and young. All new pens, up to date. Los Angeles Rabbitry, 1239 E. 22nd St., Los Angeles.

Three Holstein Friesian Bulls, splendid young animals, for sale. Well marked and subject to registry. Write at once to Geo. C. Roeding, Fresno, Cal.

Rufus Red Belgians, White Angoras, New Zealand Reds and Silver Grey Flemish Giant Rabbits. Catalog free. Caldwell Bros., Los Angeles, Cal.

For Sale—Hornless Toggenberg Billy Goat, seven months old. Price $10. A. H. Niemann, Tropico, Cal. Phone Glendale 47 J.

For Sale—Shorthorn bulls and Berkshire hogs. Bred for size and quality. H. L. Murphy, Perkins, Cal.

Berkshire Pigs for sale from registered stock. B. de Groot, Aptos, Cal.

WANTED

Local Representative Wanted. Splendid income assured right man to act as our representative after learning our business thoroughly by mail. Former experience unnecessary. All we require is honesty, ability, ambition and willingness to learn a lucrative business. No soliciting or traveling. This is an exceptional opportunity for a man in your section to get into a big paying business without capital and become independent for life. Write at once for full particulars. Address E. R. Marden, Pres. The National Co-Operative Real Estate Company, L 448 Marden Building, Washington, D. C.

Manager of Orange Property—Have had wide experience in handling orchards and alfalfa. Wish position as manager or in directing labor. Specially wide experience with the citrus. Address Y, Cultivator Office.

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Have You a Cow?—Have you a creamery? Have you a cheese factory? Write us. Everything used in either a dairy, creamery, cheese factory, or for handling milk, cream, butter or cheese. We are in a position to quote you prices on entire creamery or cheese-making outfits. We make a specialty of only the latest and best sanitary machinery and supplies. Send us a list of what you want, and we will quote prices which we feel certain will interest you. O. J. Weber Co., 225-227 East Sixth St., Los Angeles, Cal.

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Dairy Floating Thermometers and all kinds of supplies for the dairy at Guy F. Kelsey Co., 108 E. 8th St., Los Angeles. Phone Sunset Main 7406.

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For Sale—Agricultural implements, vehicles. Splendid values, lowest prices, liberal credit. See us without fail before buying. Catalogs mailed out of town customers. Write us describing what you wish to buy. When in the city a personal call will show the largest stock and assortment in the Southwest. Arnott & Company. Established 1892. 112-118 South Los Angeles Street, Los Angeles.

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For Sale—Special bargains in ferns, ivy and roses by mail, postpaid.
12 ferns (6 varieties), $1.00.
10 Rex Begonias, $1.00.
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6 Roses with any of above offers, 50c.
Address Ballou's Nursery, Pasadena, Cal.

Ahuacate Seeds, Avocado, Alligator Pear, Persea gratissima. Price reduced to $3.75 per 100 and $33 per 1000. Germination guaranteed if our directions are followed. Montarioso Nursery, Box 1500, Santa Barbara, Cal.

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If you want to buy a small ranch, orchard or large farm, write us, explaining exactly the kind of a property you are looking for.

We deal in farm lands only, and make a specialty of Southern California and San Joaquin Valley farms.

With the hundreds of different farms listed in our office, we are naturally able to find the bargains, and it will pay you to investigate our lands.

If you want to trade your farm for another farm, tell us about it, giving us all the details. We are fully equipped to handle your property.

The James R. H. Wagner Co., 329 South Hill Street, Los Angeles, Cal. Members L. A. R. B.

For Sale—Rancho Summermont of 44 acres, situated in the beautiful and fertile El Cajon Valley, eighteen miles from San Diego. Ranch is improved with 9 room house with good barn and outbuildings, is irrigated with good well and new engine and pumping outfit, and two and one-half inches flume water. Has 12 acres citrus fruits, about 12 acres in deciduous fruit, shade and ornamental trees, with magnificent palm drives. Balance of land is used for grain. This would be an ideal location for a sanitarium, as well as for a private home. For further particulars address Summermont Ranch, El Cajon, San Diego Co., Cal.

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10-Acre Orange Grove, $1,500 per acre. The best small investment in California. Trees 12 years old, in perfect condition and loaded with fruit. This grove will pay for itself in four years. In best residence section of thriving little city, one hour from Los Angeles. Ripe for subdivision at $2,400 per acre. This is not hot air, but facts. Investigate this if you want a grove. L. F. Anderson, 800 West 47th St., Los Angeles, Cal.

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666 Acre Stock and Grain Ranch, A-1 soil, all under cultivation, good modern buildings, plenty good water, family orchard close to high school. Price and terms on application. F. W. Bartz, owner, Kensal, North Dakota.

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Our business is entirely farm lands in California. We have a half a dozen salesmen, all of whom are farmers, and devote their entire time to buying, selling and exchanging farms.

If you want to trade your farm for some other farm, or even city properties, give us all the details—or, if you wish to purchase a new farm or ranch, ask us to send you a list of our different properties.

The James R. H. Wagner Co., 329 South Hill Street, Los Angeles, Cal. Members L. A. R. B.

FOR RENT

For Lease—3 story concrete building, 50x100 feet, on prominent corner of Grand avenue, Escondido, California. Suitable for hotel, bank or store. Will lease ground floor separate if desired. Address, Conrad & Co., Escondido, Cal.

Imperial Valley Fruit Ranch to Let—160 acres in early table grapes, apricots, alfalfa and cotton; 2 miles from county seat. Tenant must have experience, and $3000 capital to furnish labor. Address Horticultural Dept., Box 2, El Centro, Cal.

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Lasher's Hatchery, 15 Kent St., Petaluma, Cal.—Why my chicks live and grow in the hands of my customers: They are all hatched from free range stock, bred right, mated right, fed right. I have the most up-to-date hatchery building in the country, built of brick, with dead-air space in wall, giving me a uniform heat that means strong, healthy chicks; 16 years in the hatching business, 10 years at present stand. It is no experiment or guesswork with me. Am now booking orders for August and later delivery. On account of time and room, will sell all of my Belgian Hares, 200 breeders, young and old. Write for prices on just what you want.

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The Goodacre Strains—Our Red chicks are hatching strong, only $12 per 100. Do you want Ancona chicks at $15 per 100 or 18c each? How about yearling males at $3 for Leghorns and Anconas; $5 to $7 for R. I. Reds and Buff Orpingtons? Eighteen Leghorn hens and cock for $20; R. I. Red young cock and four hens, $12; Buff Orpington young cock and four hens, $14. Write for our summer price list. Goodacre Bros., Compton, Cal.

S. C. White Leghorn Cockerels, 3 months old, from roosters of F. Baldwin, San Jose, and one of the best flocks of White Leghorn hens in Petaluma. If taken before Sept. 1, $1.50 each or $12 per dozen; after Sept. 1, $2 each or $18 per dozen. Also Buff Orpington cockerels, $1 each. L. T. Smith, Beaumont, Cal.

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Olsen's White Leghorns. Day old chicks and hatching eggs are money makers for you. They lay and pay because they are bred that way. Book orders now for Fall, Spring and Summer deliveries. Address, Olsen's White Leghorn Ranch, Sunnyvale Cal.

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At Los Angeles Show, 1911, every first premium and two silver cups; two specials for best male and female. Place your order for fall cockerels. C. C. Bonnell, 2919 Brighton Ave., Los Angeles, Cal.

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Orpingtons—High class Buff and White. Bred to lay from prize winning stock. 500 pullets and cockerels for sale. Reasonable prices. Will mate pens with unrelated males. Write Mrs. S. Swaysgood, Route 1, Healdsburg, Cal.

White and Brown Leghorn Chicks for sale, from good thoroughbred stock. Orders taken now for September and October delivery. Large orders solicited. Hausam & Gelatt, San Jose, Cal. R. 6, Box 218.

White Leghorns—Buff Orpingtons. Bred for beauty and great egg production. Grand lot of both old and young stock for sale. Prices reasonable. Write your wants. Model Poultry Farm, Box H, Irvington, Cal.

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Rose Comb R. I. Reds—A few fine breeding cocks for sale at bargain to make room. W. H. Pickering, 984 E. 55th St., Los Angeles, Cal.

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Good Barred Rock Cockerels, $1 and up, according to age and quality. G. L. Hawley, Madera, Cal.

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A Few Choice English Indian Runner Drakes for sale, $2.50 each. Orders booked for eggs from same strain, $1.50 per dozen. Unsurpassed layers, white eggs. Address Mrs. Fred Chester, Santa Rosa, Cal. Route 2.

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For Sale—Second-hand windmills, tanks, pumps, engines.

OUR SPECIALTY—NO WORRY, MATERIAL GUARANTEED.
Dozen windmill outfits, 8, 10, 12 ft. sizes, tanks to suit.

GASOLINE AND DISTILLATE ENGINES.
Have four great big snaps, as follows: 2½ H. P. Lambert and jack, 4 H. P. Stearns engine, 5 H. P. R. & V., no better made, 6 H. P. Fairbanks. Another 26 H. P. Foos, cylinder and piston, good as new, $390. Can you beat it? 25 H. P. engine and hoist, brand new, runs perfectly, cost $1200, for $600 cash. 1 3-4 kilowatt, 15 amp. generator, rheostat and switchboard, complete, $50.

TANKS.
100 second-hand tanks, all sizes; no worry, save you half; some new ones at half price.

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200 ft. 10 inch pipe, do for flume, $16; 4 inch casing at 14c, 6 inch casing 29c, 8 inch casing 40c; 300 gallon rendering kettle, $10; 2 H. P. steam engine and small boiler; boy's saddle and bridle, brand new, $6; 2 ton truck, $25; 2 horse tree sprayer; 2 circular saws; windlass; stock tanks; dandiest team 1000 pound mules in city, $195; well mated, guaranteed any place.

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$100 Standard, guaranteed, for $19; $100 Visible Oliver, guaranteed, $24; Smith Premier with $20 tabulator, $27.50. Taken in trade and must be sold. Demmitt Co., 120 N. Main St., Los Angeles.

For Sale—Gas engine, pump, electric motors and other machinery, standard makes, thoroughly overhauled and guaranteed. Bailie & Brandt Co., 943-45 N. Main St., Los Angeles, Cal.

For Sale—32 H. P. Fairbanks-Morse gas engine. Must be sold. Will guarantee. Machinery Exchange, Main and Bruno Sts., Los Angeles, Cal.

MISCELLANEOUS

Free—"Investing for Profit" Magazine. Send me your name and I will mail you this magazine absolutely free. Before you invest a dollar anywhere, get this magazine—it is worth $10 a copy to any man who intends to invest $5 or more per month. Tells how $1,000 can grow to $22,000; how to judge different classes of investments; the real power of your money. This magazine for six months free if you write today. H. L. Barber, Publisher, R. 430, 28 W. Jackson Boulevard, Chicago, Ill.

Choice Honey for Sale—At low altitudes honey rapidly absorbs foul gases, which prevent perfect digestion. I keep honey in high mountains, where it absorbs the purest of ozone. Honey as kept in my patent, wax-coated, film-covered cans constantly improves in flavor, digestibility and wholesomeness. If you value health, you should investigate this. C. W. Dayton, Chatsworth, Cal.

For Sale—The Patented Right to manufacture and sell a heat and smudge fuel for frost prevention in orchards and gardens. Better by 50 per cent and cheaper by 75 per cent than any other on the market. No reservoirs needed, no wagon tanks, no pots, no storage houses. Big money maker. For particulars address Otto Anderson, 800 W. 47th St., Los Angeles, Cal.

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PROTECT YOUR HENS AND CHICKS.
I have discovered a simple, harmless way of destroying and preventing lice. Easily applied, cheap and effective. Postal brings the secret. H. S. Thornberry, Lordsburg, Cal.

Special Incubator Offer—We are overstocked on 130-egg size Success Incubators. We offer 50 of them at $10 each as long as they last; regular price $14. Order now. E. E. McClanahan Incubator Co., 112 East 8th St., Los Angeles, Cal.

SEEDS AND PLANTS

Fresh Avocado Seeds for August delivery, $3.75 per 100. Orange, Lemon and Grape Fruit Trees, all first class stock. Special prices to parties planting groves. Also strong Florida sour seed bed stock. Edward A. Carvel, 1454 Oak St., Glendale, Cal.

TREES

Fine Line of Navels, Valencias and Eureka Lemons for delivery spring of 1911. Contract now and get the first choice. The King Citrus Nurseries, Whittier, Cal.

For First Class Valencia and Navel Orange Trees and Eureka Lemons, see A. G. Snow, Oxnard, Cal.

TURKEYS.

For Sale—Real Mammoth Bronze Turkeys, one year old. Tom's weight is about 30 pounds. $11 takes the two. Address, 1624 Angus St., Fresno, Cal.

THE SECOND DIMENSION.

It was on a little branch railway in a Southern state that the New England woman ventured to refer to the high rates. "It seems to me five cents a mile is extortion," she said, with frankness, to her Southern cousin.

"It's a big lot of money to pay if you think of it by the mile," said the Southerner, in her soft drawl; "but you just think how cheap it is by the hour, Cousin Annie—only about thirty-five cents."—Youth's Companion.

"Every day is a fresh beginning;
Listen, my soul, to the glad refrain,
And, in spite of old sorrow and older sinning,
And puzzles forecasted, and possible pain,
Take heart with the day and begin again."

Work for some good, be it ever so slowly;
Cherish some flower, be it ever so lowly.
Labor—all labor is noble and holy.
—Osgood.

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Would Have Saved the Farmers of California

$500,000 Last Year

The average farm fire causes a loss of $1,000. Think for yourself how many barns and dwellings were destroyed last year. Yet every fire started from small fires. Ninety-nine out of every hundred could have been put out by the

MAGIC FIRE EXTINGUISHER

It throws a chemically charged stream 40 times more effective than water, to a distance of 50 feet. To start it simply turn bottom side up. With care it will last a lifetime. When emptied it can be refilled at a cost of ***thirty-five cents.*** It costs $12 delivered at your nearest railroad station. When more than two are bought at the same time a special price is made.

Can you afford to risk losing a ***thousand dollars*** that ***35 cents*** might save?

Order a ***MAGIC*** for each building on your farm. Do it today. Tomorrow may be too late.

"Fire Fighting on the Farm," an interesting booklet, free.

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Large Machine Shops—Mechanical and Electrical, Chemical and Steem Laboratories.

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Household Department

JEST ASK DAD.

Our fam'ly is the queerest one
  I'll bet you ever see;
There ain't but one in all the batch
  With a good quality.
The rest o' us have lots o' traits,
  But all of 'em are bad,
An' if you don't believe me, why,
  You jest ask dad.

There's sister Kate an' sister Nell,
  Their fault is makin' breaks;
They ain't like pa a single bit,
  Because they make mistakes.
They ought to have been better with
  The trainin' they have had,
But if you don't believe me, why,
  You jest ask dad.

Next comes my sisters, Bess and Sue,
  With fault of too much style;
They seem to think o' nothin' else,
  They talk it all the while.
They keep us in hot water with
  Some fool, expensive fad,
An' if you don't believe me, why,
  You jest ask dad.

Now last—not least—comes Bill an' me;
  Fergettin' is our trait.
It ain't no habit we've acquired,
  It seems to be our fate.
We all take after ma, we do—
  No wonder we're so bad—
An' if you don't believe me, why,
  You jest ask dad.
—John D. Larkin, in Woman's Home Companion.

THE CONJURER.

All around him hummed cheerful conversation, but Mr. Frederic Boyson sat alone and dejected in his corner. Occasionally some one would notice his gloom and address him; but he answered almost sulkily, and soon became the subject of whispered comment.

Only conscious, however, of the fact that Miss Hilda Wenlock had glances and smiles for everybody except himself, Mr. Boyson followed her with a furtive eye. "You never know what to expect with a girl," he reflected helplessly. "She'd lead you on, and encourage you until you were on the point of proposing, and then suddenly, for no reason at all, apparently quite forget your existence. It is enough to make a fellow wish he had never accepted the invitation to her home."

"It'll be quite a mixed affair, Mr. Boyson—mostly young people, and some children."

A mixed affair—yes! Otherwise, he told himself bitterly, a person like Herbert Pinsent, who was leaning maddeningly close to Miss Wenlock as he talked, would never have seen the inside of the house. With set teeth, Mr. Boyson glared in the direction of the couple. His hostess had to address him twice before he heard.

"All alone? Oh, that's not fair. You ought to be helping me entertain people. Let me see, now; what is it you're so clever at? Ah, of course—the very thing."

Mr. Boyson, guessing what was coming, reddened and began to stammer.

"Oh, no, I can't accept any excuses, really," Mrs. Wenlock raised her voice. "Listen, please, everybody. I dare say you've all heard about Mr. Boyson's conjuring. Well, he has promised to show us some——"

He muttered a frantic suggestion.

"Oh, well, then, directly after supper, so that the room can be cleared a bit. Promised to show us some tricks," she concluded trimuphantly.

Mr. Boyson found, all eyes focused upon him, some in pitying superiority, others in contemptuous amusement or polite surprise. He groaned inwardly.

"I won't do it," he avowed—I-I'll say I'm ill, or something."

But Mrs. Wenlock had disappeared, and when at length he found her she laughed at all his protestations.

From then till supper time he moved restlessly about, the picture of misery; and although he sat down to the meal he could hardly eat a morsel. He thought of making a desperate appeal to Miss Wenlock; but she had vanished. At last a maid touched his shoulder to arouse him.

"We've arranged the chairs, sir; and your box has come. And please, the missis says will you kindly see if there's anything more you want."

"N-no," declared Mr. Boyson sepulchrally. "Nothing."

She waited, however, so he rose and followed her.

"A screen, then, if you don't mind; and——er——." He mumbled a confused request.

He could escape directly afterwards, he decided frantically—once the pitiful exhibition was over. Then the house—and Hilda Wenlock—should know him no more. Dully he busied himself in the few preparations necessary. His hostess looked in.

"All ready? Now do come back and finish your supper. You've had positively nothing."

Feebly protesting, he was bustled off again. When they arose from the table he gulped down a drink. The other men gathered around, and made chaffing comments. He scarcely heard what they said. As if in a dream, presently, he found himself facing an expectant throng.

"Of course—er—you all know that I'm only an amateur at—er—the game; and really I didn't want to—that is to say, my tricks aren't up to much—er—at the best of times; and I doubt very much if they'll really come off—so if—so you mustn't expect too much, because—I—er—don't really pretend to—er—I mean—."

Timely clapping of hands led by Mr. Wenlock from the background, served to cover his halting attempt at explanation. He cleared his throat and blew his nose violently. His fingers were curiously unsteady.

"For my first trick—er—I have here an ordinary pack of cards. Will some lady or gentleman kindly select one and—and remember it? Thank you. Now there are three piles; which pile is it in, sir? Again, three piles. The left-hand one? Er—just once more. In the center? I will now deal out; and the card chosen," faltered Mr. Boyson bravely, "should be, if I'm not mistaken—let me tap it with my magic wand—should be the—the eight of clubs."

His heart was in his mouth. A confirming nod made him smile in nervous triumph.

"Right? Aha! the wand never makes a mistake. You'd like to see it again?" An interval followed. "Your card, madam: the two of diamonds — er — should say queen of spades. A slight m-miscalculation."

"Queen of spades it was," confessed the lady shyly. Mr. Boyson grew more confident.

"That little trick, I may say, was taught me by—well, I forget his name for the moment, but—er—my next feat," continued Mr. Boyson hastily, "will be to smash up somebody's watch in full view of the audience,

and then restore it undamaged. The watch—I should like to borrow——"

Sarcastic laughter was general. He explained with difficulty. Mr. Wenlock at last was persuaded to offer his timepiece.

"Now a top hat, if somebody will kindly—thanks. You observe me place the watch inside. Now I will pound it with this mallet. Note—er—note the pieces. We next cover the hat with a handkerchief—so. Hey presto! the hat is empty. Will you pass that ornament off the mantlepiece, sir? Inside we have the w—— the up——."

Mr. Boyson hesitated, staring amazedly.

"The watch; also—also—," he continued jerkily.

"My chain," declared Mr. Wenlock, excitedly. "But I wasn't wearing it. I'd left it in my bedroom. This is marvelous.

Mr. Boyson muttered deprecatingly.

"And it was a full half minute before the entertainer could continue.

"I will—er—now endeavor to change this handkerchief—my own, but quite ordinary; examine it if you like—to change it into something else. I move this screen in front of the empty table—so. Wave my magic wand—so. Any member of the audience like to take the screen away?"

A small boy pressed forward eagerly. At sight of the arrangement of flags there came a gratifying murmur of surprise.

"You can pick them up, my lad. Why—what on earth—."

"My guinea pig!" The applause was almost deafening. Mr. Boyson stared at the animal with bulging eyes, mopping the perspiration from his brow.

"Splendid! Now, how to goodness did you even know we had a guinea pig, much less make it appear like that?"

Mr. Boyson would have liked to answer his hostess' inquiry, but he himself had been only too surprised. "Much better than he used to be," came a whisper faintly from the audience, and he recovered himself with an effort. But when, after balancing an apple on his wand and banishing it to the chimney, he found there the fruit inside half a dozen boxes, carefully packed, he literally staggered. Some queer outside influence was at work.

Such, however, was his success that even a final weakly, humorous episode was well received.

"I will step behind the screen. When it is removed, you will no longer be able to see me. There! What did I tell you?"

Switching on the electric light again, he bowed modestly.

"And that will conclude my entertainment for this evening, ladies and gentlemen. Thanking you, one and all, for your kind attention——"

"Now, do tell us how you did them all."

"My dear Mrs. Wenlock, that must remain a secret, I am afraid. In fact, I—I—er—couldn't explain, really."

"Outsiders wouldn't understand, would they?"

He swung round at the mischievous voice behind him, and met Miss Hilda Wenlock's innocent gaze.

"It was you!"

"H'sh!" she urged, in a whisper. "Wait till they've started games."

Mr. Boyson's heart beat tumultuously. When she slipped out, giving him a backward glance, he followed ecstatically into the deserted hall.

"You've carried it off very well, considering. Thought I'd give you a bit of extra help. It was a great shame for Mother to make you——"

"But how——"

"While you were out of the room I had a few minutes. I knew all your old tricks, of course. Guessed where you had hidden the things, and added a few more."

"You wanted me to make a success of it. You didn't want me laughed at?"

Miss Wenlock cast down her eyes.

"You—you do really care about me—sometimes, then."

Her answer was inaudible. Mr. Boyson, however, began to fumble in his waistcoat pocket.

"Hullo!" She laughed a trifle nervously. "Hey, presto! and what appears?"

"This!" retorted the conjurer, boldly. "Wonder if it'll fit your finger?"

"I knew you'd brought it," observed Miss Wenlock, shyly. "Saw you examining it in the passage. I was looking over the banisters. Some people take things too much for granted! Fancy getting this before you'd as much as asked me—well, you wanted a lesson!"

"So that's why you've been with Herbert Pinsent nearly all the evening?"

"Still, I think," declared Miss Wenlock, nodding complacently, and eyeing the ring with pride, "I think your last trick was quite the best of all."—Journal of Agriculture.

SANDWICH FILLING.

A well-made sandwich with a new kind of filling is something which a hostess may justly take pride in. It is not enough, however, that sandwiches be novel, they must be good to eat as well, a consideration which is sometimes sacrificed for the first mentioned attribute.

Pimentos chopped with lettuce hearts and mixed with mayonnaise makes a good sandwich filling.

Shreaded lettuce with small pieces of very crisp bacon and capers also makes a good filling. For those who like sweet sandwiches a paste made of bar-le-duc and Neufchatel or cream cheese is good.

It is a good thing to remember when serving sandwiches at a formal gathering that chopped or shredded lettuce is much easier on gloved hands than the usual lettuce leaf sandwich.

Minced Ham.

With a cupful of cold boiled ham, minced, mix half a cup of chopped celery and a heaping tablespoonful of minced sour pickle. Form into a paste with salad dressing and spread between slices of white bread.

Fish.

Skin and remove bones from cold fish. Mix, add salt and pepper, two hard boiled eggs chopped and salad dressing enough to form a paste.

Egg and Cucumber.

Chop and mix in equal parts hard boiled eggs and cucumber. Add salad dressing, salt and pepper. Good on white or brown bread.

Olive.

Pit and chop one dozen queen olives. Put to them the same amount of chopped nuts. Mix with salad dressing.

Chopped Apple.

Chop firm, ripe apples of a mild sour. Mix with one-quarter their bulk of grated cheese. Spread the bread, white or brown, with mayonnaise and fill with apple and cheese.

When cooking green vegetables, do not cover the pot in which they are boiled or they will be a bad color. A small piece of common soda, the size of a pea, added to the water, will make them a vivid green.

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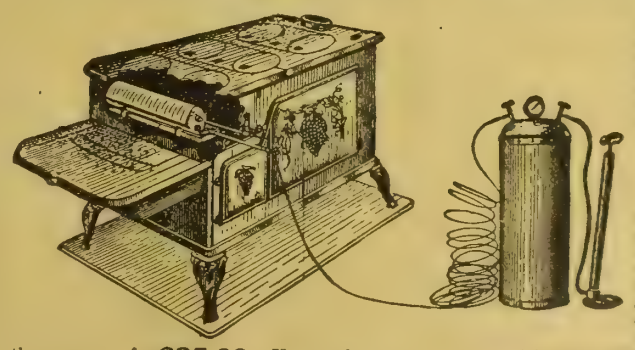

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San Francisco-Los Angeles Produce Markets

Los Angeles Market

LOS ANGELES, Aug. 16, 1911.

Butter.

An advance of a cent and a half has been made during the past week and receipts are at present about 60,000 pounds daily. There has been a shortage in offerings of strictly gilt-edged table grades, which makes firmness.

Prices to trade 2½c in advance of the following Produce Exchange quotations:

Extras	26½
Firsts	25
Ladles	23
Country	20

Cheese.

Local Anchor	16
Oregon Daisy	16@16½
Northern Fresh	15@16
Domestic Swiss	18
Imported Swiss	30@32

Eggs and Poultry.

The demand for eggs has been in excess of the supply, especially in the better grades. This has caused a slight advance and more firmness. Some days the receipts only reach 100 cases.

Paying prices f. o. b. Los Angeles are:

Local ranch, candled	34
Case count buying price	30
Northern and Imperial	28@32
Eastern	25@26
Pullets	25

Dealers pay for live poultry f. o. b.:

Hens, per lb	12@14
Roosters	6@8
Broilers	14
Fryers	12
Roasters	14
Turkeys	23@27
Ducks	12
Geese	10
Guinea hens, doz	4.00
Squabs, doz	1.75

Live Stock.

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs	7¼
Prime steers	6
Heifers	6
Calves, per lb	6½
Sheep, ewes, per head	4.75
Lambs, per head	3.75@4.25
Wethers	5.00@5.50

Potatoes.

Wholesale prices are:

Sweets, yellow, lb	3½@4½
New potatoes, lugs	85@90
Burbanks, lug	1.60@1.90
Highlands, ctl	2.10@2.25

Onions.

Wholesale quotations:

Australian Red, ctl	1.75
Silverskins, box	40@50
Yellow Danvers, ctl	1.50@1.60
Garlic	6@8

Vegetables.

Wholesale quotations:

Artichokes, northern, doz	75@1.00
Asparagus, lb	5@7
Beets, doz bunches	20@25
Bell peppers, lb	5@7
Beans, wax	3@4
Green chilis	4@6
Chilis, dried	15@20
Cucumbers, lugs	35
Cabbage, sack	95@1.00
Cabbage, red, lb	3
Cauliflower, doz	1.50
Celery, new, crate	2.50@2.75
Carrots, sack	1.00@1.15
Corn, lug	30@40
Egg plant	5@6
Horseradish, lb	12½
Onions, green, doz bunches	20@25
Kolrabi, doz bunches	40
Leeks, doz	45@50
Lettuce, crate	1.00@1.25
Mushrooms, basket	3.50@4.00
Oyster plant, lb	5@6
Okra	5@6
Peas, lb	4@5
Parsley, doz bunches	20@25
Parsley, doz bunches	25@30
Parsnips, doz bunches	45
Radishes, doz bunches	15@20
Rhubarb	1.25@1.50
Spinach, doz	20@25
Squash, summer	25@30
Spearmint, doz	25@30
Tomatoes, lug	30@50
Turnips, sack	1.00@1.25
Watercress, doz	25@40

Citrus Fruits.

Valencias	2.75@3.50
Grapefruit	1.75@3.00
Lemons	2.00@5.00
Limes, hundred	1.25

Fresh Fruits.

Wholesale prices on the market are:

Apricots, crate	1.25@1.50
Apples, W. Astrachan	2.00
Apples, Gravenstein	1.50@2.00
Apples, Alexanders	1.75@2.00
Apples, Crab, lug	1.25
Bananas	3½@4
Cantaloupes, small	60@70
Cantaloupes, large	1.50@1.75
Currants	8@10
Figs, box	75@1.25
Grapes, Sweetwaters, crate	1.35
Grapes, Thompson Seedless, lb	3
Grapes, Black, crate	1.50
Grapes, Malagas, lug	1.35
Loquats, lb	4@6
Loganberries	6@7
Nectarines, lb	6@7
Peaches, lug	60@90
Pineapples	7@8
Plums, Clymans, lug	1.50
Plums, Satsuma	90@1.50
Plums, Tragedy	1.50
Plums, Burbank	75@85
Plums, Green Gage	1.75
Prunes, Simoni	1.50
Pears, lug	3.00@2.25
Dewberries	4@5
Blackberries	6@7
Raspberries	7@9
Gooseberries, lb	8@10
Strawberries	4@6
Watermelons, lb	¾@1

Dried Fruits.

Wholesale prices are:

Evaporated Apples, fancy, lb	18
Apricots	14@17
Figs, box	1.85@2.25
Peaches, peeled	25
Nectarines	12
Pears	12@13
Prunes	10@13
Plums	10

Beans Dried.

Wholesale quotations:

Limas	6.75
Black eyes	8.00
Pinks	5.75
Lady Washington	4.00
Small white	3.75@4.00
Garvanzas	4.50
Lentils	6.00@7.00
Mexican Reds	4.75@5.00

Nuts.

Wholesale quotations:

No. 1 soft shell walnuts	18
Almonds, IXL, lb	19@20
Pecans, polished	15@17
Peanuts, Eastern	8
Peanuts, California	6
Pine Nuts	18

Honey.

Wholesale quotations:

Extracted water white	8
Extracted light amber	7
Comb water white	16@17
Light amber	13@14
Beeswax	30

Hay.

Buying prices f. o. b. cars Los Angeles are:

Barley hay	11.00@13.00
Wheat hay	11.50@12.50
Tame oat	14.00@15.00
Alfalfa	12.50

Grain.

Wholesale selling price f. o. b. Los Angeles:

Wheat, new, cental	1.65@1.70
Corn	1.70@1.85
Kaffir	1.95
Millet	3.75
Popcorn	4.75@5.00
Egyptian corn	1.65
White oats	1.80
Seed barley	1.50

Feed Stuff

Wholesale selling price f. o. b. Los Angeles:

Alfalfa meal	1.15
Beef scrap	3.10
Cracked corn	1.90
Cracked wheat	1.85
Shorts	1.95
Bran	1.70
Oil cake meal	2.50
Feed meal	1.95
Rolled Barley	1.65
Middlings	1.65

San Francisco Market

SAN FRANCISCO, Aug. 15, 1911.

Butter.

Considering the season, the receipts are immense. Monday's arrivals totaled 113,800 pounds. Notwithstanding this heavy receipt quotations in fresh stock are held firm. There have been some small sales made a half cent in advance of the following quotations:

California extras, lb	26
Prime firsts	24½
Firsts	24
Seconds	22

Cheese.

Cal. flats	11@14
Cal. Y. America, fy, new	14@16
Oregon, fancy	14

Eggs and Poultry.

Monday's receipts of eggs reached over 3000 cases. On the 11th an advance of a half cent was made on extras, and notwithstanding these heavy receipts present conditions are very firm. Prime firsts and firsts show a more marked advance than extras. A 5-cent advance is noted in the prime firsts.

Official quotations of the San Francisco Wholesale Dairy and Produce Exchange are:

Fresh ranch extras	33½
Prime firsts	31
Firsts	27
Seconds	19½
Eastern seconds	16
Select pullets	25½

Monday's receipts of Eastern stock noted by arrival of two cars. Receipts of local stock very small. Prices steady.

Hens, doz	4.00@9.00
Fryers, doz	4.50@5.50
Ducks	4.50@7.00
Broilers	2.00@3.50
Roosters, doz	4.00@9.00
Geese	2.00
Goslings, pr	2.00@2.25
Pigeons	1.50@2.00
Squabs	2.00@2.50

Live Stock.

San Francisco prices, gross weight:

Steers	4.00@5.50
Cows and heifers	3.00@4.50
Calves, lb	5@6¾
Hogs	5@7½
Wethers, No. 1	4@4¼
Milk lambs	5@5¼
Ewes, No. 1	3½@3¾

Potatoes.

Wholesale market quotations:

River whites, cwt	1.35@1.60
Sweets, lb	3@5

Onions.

Red, new, sack	75@90
Silverskins	80@1.00
Garlic, lb, new	3@4

Vegetables.

Wholesale quotations:

Asparagus, box	1.00@1.75
Beans, string	1@1½
Beans, wax	1@2
Limas	2@2½
Bell peppers, box	75@1.00
Carrots	60@75
Cucumbers, box	20@35
Corn, sack	35@1.00
Chili peppers, box	35@50
Celery, crate	1.50@2.50
Egg plant, box	40@60
Cauliflower, doz	50@60
Lettuce, crate	75@2.00
Okra, box	50@75
Peas, sack	1.00@1.25
Hubbard squash, sack	1.00
Summer squash, lug	25@35
Tomatoes, lug	60@1.00
Turnips	60@75

Citrus Fruits.

Valencias	3.25@4.00
Grapefruit	1.50@2.75
Lemons	1.50@4.00
Limes, Mexican	6.50@7.00

Fresh Fruits.

Apricots, crate	65@1.00
Apples, Gravensteins	75@1.75
Cantaloupes, ponies	60@80
Cantaloupes, standard	35@60
Cantaloupes, Rivers	85
Nutmegs, large, box	30@60
Figs, layer	90@1.00
Grapes, black	1.00@1.15
Grapes, Thompson Seed., crate	50@75
Grapes, blk	50@60
Grapes, Muscats, box	65@75
Peaches, box	35@60
Peaches, Early Crawford	40@65
Pears, box	1.25@1.50
Pears, ton	25.00@55.00
Plums, Tragedy, box	50@75
Prunes, German, box	1.00@1.25
Loganberries, chest	4.00@6.00
Blackberries, chest	3.00@4.00
Raspberries, chest	7.00@10.00
Strawberries	4.00@6.00
Pineapples, Hawaiian	2.00@3.50
Bananas	1.00@1.50
Watermelons, doz	1.50@2.75

Dried Fruits.

FRUITS—1911 crop, f. o. b., carload lots, per lb.—Apples, 11@12¼c; Apricots, 15¼@18c; Peaches, 10½@11¾c; Prunes, bulk basis, 5½@7c; per lb., 4¾@9½c, with a premium of ½@1c on large sizes; Figs, 5@6c for White; Pears, 11@14¼c.

RAISINS—1911 crop: Seeded, per pkg. —Fancy, No. 16, 8c; Choice, No. 16, 7¾c; Loose Muscatels, in 50-lb. boxes—Standard, 4-crown, 6½@7c; do, 3-crown, 6@6¼c; do, 2-crown, 5½@5¾c. Seedless—Muscatel, 5¼@5½c; Sultanas, 6¼@6½c; Thompsons, 6¾@7c.

Nuts.

Walnuts, No. 1 soft shell	16@16½
Walnuts, No. 1 hard shell	14½
Almonds, '10, N P U	16@16½
Almonds, '10, Nonp	18@18¾
Almonds, '10, I X L	16½@17¼
Pecans	14@17
Chestnuts, California	6@8
Peanuts	5@5½

Beans Dried.

Limas	5.75@6.00
Pink	4.80@5.00
Black eyes	6.00@6.35
Small white	3.60@3.75
Large white	3.40@3.50
Kidneys	5.50@5.75
Garbanzos	3.00@3.25
Bayou	3.75@4.00
Horse beans	1.50@2.00
Red Mexicans	5.00@5.25
Cranberry	3.75@4.00

Hops

Hops, coast, 1910	30@32
Hops, 1911 contracts	30@35
Hops, Oregon, 1911	30@35

Honey.

Water white, comb, '11	15
Dark comb	12½
Extracted white, '11	9@10
Extracted dark	6½
Beeswax, lb	24@30

Hay.

Scott, Magner & Miller say:

We have received on this market for the week ending today 4100 tons. A large part of these arrivals came by water and consisted of alfalfa and medium types. The arrivals by car from our better hay districts have been comparatively light for this period of the season, when we should be receiving large quantities from the fields.

The better grades are going rapidly into the warehouses and the fields will be thoroughly cleared of our choice types very early this season, and such hay most probably will command much better figures than prevail at this time.

Feed grains have advanced sharply during the last week. Large operations on purchase account of oats and barley have been going on steadily for the last two weeks, and each day at advanced figures, and at this writing the prices being paid for oats and barley are comparatively very high, but appear to be justified by conditions prevailing, not only on this Coast, but all over the United States. The government crop report, just issued, shows a shortage in the United States on hay alone of 12,579,000 tons. These facts when considered in connection with the crop of hay in California must lead toward the idea of a higher basis of values for our best lots of hay.

The market on alfalfa has continued along in a rather listless condition, and without any decided features to note. Trade here on alfalfa has been light and operations are small for this period of the season.

We quote the wholesale prices in round lots on today's market as follows, viz:

Fancy wheat hay	15.00@15.50
No. 1 wheat or wheat & oat	12.50@14.00
No. 2 wheat or wheat & oat	11.00@12.00
Choice tame oat	13.00@13.50
Other tame oat	10.00@12.00
Wild oat	9.00@11.00
Stock hay	5.50@6.50
Alfalfa	9.00@11.00
Straw, bale	45@55

Grain.

Wheat	1.40@1.47½
Barley, fancy	1.55@1.56¼
Barley, good to choice	1.50@1.52½
Barley, poor to fair	1.42½@1.47½
Corn	1.60@1.62
Oats, red	1.40@1.60
Rye	1.50@1.60
Mustard, brown	5½
Alfalfa seed	18
Millet	3@3¼
Flaxseed	5@5½
Broom corn seed, ton	25.00@30.00

Feed Stuff

Alfalfa meal	15.00
Bran, ton	28.50@30.00
Feed cornmeal, ton	37.00@38.00
Cracked corn	38.00@39.00
Rolled barley, ton	28.00@29.50
Rolled oats, ton	29.00@30.00
Middlings	32.50@35.00
Oil cake meal	42.00@43.50
Cocoanut cake, ton	25.50@26.50
Mixed feed, ton	25.00@27.00
Shorts	29.00@31.00

Citrus Fruit Market

LOS ANGELES, Aug. 16, 1911.

With immense quantities of all kinds of deciduous fruits filling the markets it is not strange that Valencias are not in keenest demand. As an example of the conditions we may mention that on last Monday the one market of New York absorbed 60 cars of California deciduous fruits. To meet these conditions orange shipments have been materially lessened and it is hoped this will give a stronger tone to the market. Regular sizes of first class fruit still command fair prices, but the large number of small sizes has forced some of them off at almost ruinous prices.

The novel spectacle of Mediterranean lemons being re-shipped from the port of New York to European points has been witnessed during the last week. Extreme weather conditions and lemon shortage has made keen demand which gave promise for bigger returns for the foreigns than could possibly be secured in this country. Prices are now exceptionally good and promise is made for continuation of this condition to the end of the season.

Shipments.

Shipments of oranges to date since November 1st, 1910, 35,162 cars, lemons 5,943, total 41,105. To same date last season: Oranges 24,106 cars, lemons 4,197, total 28,303.

NEW YORK, Aug. 14.—Seventeen cars Valencias and one car lemons sold. Market steady on oranges, higher on lemons. Fair and warm.

VALENCIAS—	Avge.
Shamrock, Placentia M. O. A.	$5.40
Caledonia, Placentia, M. O. A.	4.35
Albion, Placentia M. O. A.	3.60
Cambria, Placentia M. O. A.	2.65
Duquesne, Duquesne Ft. Co.	4.35
Fort Pitt, Duquesne Ft. Co.	3.30
Old Mission, fy, Chapman	5.25
Old Mission, ch, Chapman	4.25
Golden Eagle, sd, Chapman	3.75
O Brand	1.85
O O Brand	2.30
Corona, National O. Co.	4.00
Corona Standards, National O. Co.	3.30
Tustin Gem, Tustin P. Co.	2.65
Old Oak, ch, Tustin P. Co.	2.20
Glendora Heights, fy, A. C. G. Ex.	4.75

Cream Separators, all sizes and prices. Guy F. Kelsey & Co., 106 East Eighth St., Los Angeles, Cal.

Glendora Heights, ch, A. C. G. Ex.... 3.70
Evolution, ch, A. C. G. Ex..... 3.05
Sceptre, S. S. Ex..... 4.00
Planet, S. S. Ex..... 3.20
Iris, D. M. Ex..... 4.50
Violet, D. M. Ex..... 3.95
Jasmine, D. M. Ex..... 3.25
Red C, Covina Ex..... 3.20
Cougar, Covina Ex..... 2.70
Violet, D. M. Ex..... 3.90
Jasmine, D. M. Ex..... 3.25
Athlete, S. A. Ex..... 3.60
Red Shield, A. C. G. Ex..... 3.30
El Azar, A. C. G. Ex..... 2.90
Violet, D. M. Ex..... 3.60
Jasmine, D. M. Ex..... 3.20
Alhambra, S. T., E. Alhambra..... 3.00
Alhambra, S. T., E. Alhambra..... 3.25
Don Quixote, S. T., E. Alhambra.... 3.10
Pioneer 2.40
Hunter, A. C. G. Ex..... 2.10
Possum, A. C. G. Ex..... 2.15
Wistaria, S. A. Ex..... 3.90
Paul Neyron, S. A. Ex..... 3.95
Fuschia, S. A. Ex..... 2.40
GRAPEFRUIT—
Orchard, standard $1.95
Primrose 1.45
Primrose 1.30
LEMONS—
Quaker Girl $3.75

CLEVELAND, Aug. 14.—Two cars Valencias, two cars lemons sold. Market easier on Valencias, higher on lemons. Warm. Clear.

VALENCIAS—	Avge.
Tiger, S. B., Colton	$3.50
Pointer, A. C. G., Charter Oak	3.65
Stag, A. C. G., Charter Oak	4.60
Hunter, A. C. G., Charter Oak	3.20
LEMONS—	
Punch, S. T., Colegrove	$2.00
Quaker Girl, S. T., Whittier	3.50
Greenleaf, S. T., Whittier	2.30
Club, S. T., Colegrove	1.70
Pico, S. T., Whittier	2.95

PITTSBURGH, Aug. 14.—Seven cars sold. Market is declining. Weak on small sizes oranges, unchanged lemons. Raining.

VALENCIAS—	Avge.
Iris, D. M., Duarte	$4.45
Pointer, A. C. G. Ex., Azusa	2.55
Parrot, S. A. Ex.	3.10
Del Oro, ch, Sparr Ft. Co.	2.45
Jasmine, D. M., Duarte	3.35
Hunter, A. C. G., Azusa	2.30
Naralimo, or, Sparr Ft. Co.	3.50
LEMONS—	
Liberty, E. F., Escondido	$3.55
Naralimo, or, Sparr Ft. Co.	3.55
Lighthouse, sd, Randolph Ft. Co.	1.85
Foxaway, E. F., Escondido	2.55
Circus, ch, Sparr Ft. Co.	2.60

BOSTON, Aug. 14.—Ten cars sold. Hot. Market unchanged on oranges, firm on good stock lemons.

VALENCIAS—	Avge.
Pointer, A. C. G., Azusa	$3.75
Pointer, A. C. G., Charter Oak	3.45
Nonpariel, Covina Ex	2.85
Alta Cresta, A. H., Pachappa	4.35
Hobo, A. H., Pachappa	2.75
Hobo, A. H., Pachappa	3.15
Pointer, A. C. G., Azusa	2.95
Peasant, A. H., Riverside	2.70
Elk, R. Henderson	3.15
Stag, A. C. G., Charter Oak	4.05
Hunter, A. C. G., Charter Oak	2.90
Teal, Covina Ex	2.55
Robusta, A. H., Pachappa	3.55
Roousta, A. H., Pachappa	4.15
Stag, A. C. G., Azusa	4.25
Kenilworth, A. H., Riverside	3.15
Alpha, R. T. Henderson	4.05
LEMONS—	
Regina, Growers Ft. Co.	$1.70
Rialto Girl, Growers Ft. Co.	1.30
Princess, Q. C., Corona	3.75
Montecito, Crocker-Sperry	2.35
Regent, Growers Ft. Co.	1.45
Laurel, Q. C., Corona	4.20
Las Fuentes, Crocker-Sperry	3.00

ST. LOUIS, Aug. 14.—Raining. Market weak on account of weather. Six cars sold.

VALENCIAS—	Avge.
Nonpareil, Covina Ex	$3.30
Searchlight, S. S. Orange	3.20
Planet, S. S. Orange	3.35
Plain Ends, S. S. Orange	2.70
LEMONS—	
Quaker Girl, S. S. Whittier	$3.65
Pico, S. T. Whittier	2.75
Sapphire, ch.	2.75
Pet, S. A. Ex.	3.20
Mission Bell, ch, Randolph Ft. Co.	2.70
Whittier, S. T. Whittier	3.60
Greenleaf, S. T. Whittier	2.65
Greyhound, S. A. Ex.	2.70
El Toro	2.35

PHILADELPHIA, Aug. 14.—Seven cars Valencias, two cars lemons sold.

VALENCIAS—	Avge.
Pointer, A. C. G., Lateen S	$2.45
Possum, A. C. K., Lateen S	2.20
Stag, A. C. G., Glendora	4.70
Hunter, A. C. G., Glendora	2.40
Alhambra, S. E., E. Alhambra	3.00
Freedom, xc, Ind. Ft. Co.	3.05
Beach, sd, Gowan & W.	2.45
Hunter, A. C. G., Lateen S.	2.10
Colombo, S. T., Fullerton	3.35
Pointer, A. C. G., Glendora	2.85
Nonpareil, Covina Ex.	3.30
Golden Orchard, fy or, Ind.	3.50
Lone Palm, xc, G. & Willard	2.85
LEMONS—	
Rooster, S. S., Orange	$2.90
Purity, S. S., Tustin	2.00
Searchlight, S. S., Orange	2.55
Evergreen, S. S., Tustin	1.60

CINCINNATI, Aug. 14. — Hot and muggy. Market steady on oranges, advancing on lemons; two cars oranges, two cars lemons sold.

VALENCIAS—	Avge.
Pico, S. T. Whittier	$3.70
Carlo, S. A. Ex.	2.50
Hawk, S. A. Ex.	2.55
LEMONS—	
Arab, S. A. Ex.	$3.30
Greyhound, S. A. Ex.	2.60
Duck, S. A. Ex.	2.25
Wave, S. T. Santa Paula	3.05
Pet, S. A. Ex.	3.65
Pup, S. A. Ex.	2.35
Sunside, S. T. Santa Paula	3.00

THE SPINAL CORD.

A young teacher whose efforts to inculcate elementary anatomy had been unusually discouraging, at last asked in despair.

"Well, I wonder if any boy here can tell me what the spinal cord really is?"

She was met by a row of blank and irresponsive faces, till finally one small voice piped up in great excitement:

"The spinal cord is what runs through you. Your head sits on one end and you sit on the other."

Fire losses are a serious factor affecting the economic conditions of any country. The farmer usually maintains a feeling of indifference toward the dangers from fire, yet according to the records of insurance companies, he is the most seriously affected of any class of people suffering from fire, as farm fires almost invariably result in total loss. Many insurance companies refuse to insure farm buildings and more particularly buildings heated by kerosene flame, such as incubator and brooder houses. This condition of affairs is entirely unnecessary as there are now many appliances on the market that enable even a woman or a child to put out a fire when it is in its early stages. It is with pleasure that we display for the first time the advertisement of the Gorham Fire Apparatus Co. and recommend that all of our readers give this advertisement attention. It is the desire of this company that the farmstead be considered a risk equally as good as the modern city building. This means also to the farmer the safeguarding of his home and is a feature that should not be overlooked. We trust that our readers will apply the old adage, "A stitch in time saves nine."

A most interesting description accompanied by many illustrations of agricultural conditions in Mexico will be furnished to anyone who will write to Ben W. McCloskey & Co., dealers in Mexican lands, at 700 Union Trust Building, Los Angeles. The company has great quantities of land in the state of Sinaloa on which many American settlers have already begun work. Labor may be employed cheaply, and it is said that irrigation is not necessary for securing crops. The section has many of the advantages and few of the disagreeable features of the tropics, and of course it goes without saying that lands may be had at a very low price.

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the most efficient all round Heating appliances for Stoves, Ranges, Boilers, Water-Heaters, and especially Hot Air Furnaces of all kinds. Brooder House and Heating Stoves. Send for Free Circulars.

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I H C Gasoline Engine

It will guarantee you a sure water supply—in fact a water supply that is even better than rain as you can have as much water as you need at just the right time. You won't have to wait for rain and watch your crops dry up in the field. An I H C engine is dependable and the cost is so small in comparison to what you can make that the extra profits the first year will often pay for it. In addition to your irrigating this same engine can be used for general purposes.

I H C engines are the most efficient and economical power known for pumping, grinding, and other farm work and are made in so many sizes and types that you can get just the engine you want for your special needs.

Vertical type—2, 3, 25, and 35-H.P.; horizontal—1 to 25-H.P.; semi-portable—1 to 8-H.P.; portable—1 to 25-H.P.; traction—12 to 45-H.P.; sawing, pumping, spraying, and grinding outfits, etc. Built to operate on gas, gasoline, kerosene, distillate, or alcohol—air-cooled or water-cooled. See the I H C local dealer, or, write nearest branch house today for our new catalogue.

I H C Service Bureau

The Bureau is a clearing house of agricultural data. It aims to learn the best ways of doing things on the farm, and then distribute the information. Your individual experience may help others. Send your problem to the I H C Service Bureau.

WESTERN BRANCH HOUSES—Denver, Col.; Helena, Mont.; Portland, Ore.; Spokane, Wash.; Salt Lake City, Utah; San Francisco, Cal.

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Chicago (Incorporated) **U S A**

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The nodules on these roots are colonies of bacteria that suck the nitrogen from the air and store it in the plant, which then becomes a valuable fertilizer. The bacteria were placed there by inoculating the seed with

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(High Bred Nitrogen Gathering Bacteria)

Science has thus brought the wonderful possibilities of bacteria fertilization to a thoroughly practical and simple method of application.

This places within reach of every grower an enormous increase in the tonnage and fertilizing value of

COVER CROPS

Vetch, clover, fenugreek and all legumes can be inoculated with Farmogerm at a nominal expense and by a simple operation, or we will treat the seed for our customers if preferred.

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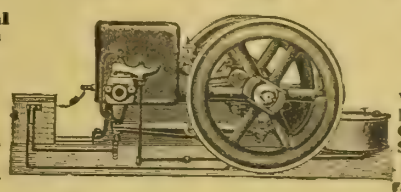
The Best General Utility Engine on the Market.

2-H. P. $75.;
4-H. P. $125.;
6-H. P. $160.;
8-H. P. $225.;

Guaranteed for 5 years to deliver the actual horse power as stamped on the name plate.



An up-to-date engine: snappy, vigorous and powerful. Simple, reliable and durable.

WHY PAY HIGHER PRICES WHEN WE CAN GUARANTEE SATISFACTION.

[Write for particulars, stating size wanted.

Norman B. Miller, Machinery Merchant
7th Floor, Hooker & Lent Bldg., 503 Market St., San Francisco.
Pump Jacks, Pumps, Belting, Etc.

(Telegram)

New Franklin, Mo., May 3-4-1911.

The Frost Prevention Co., Balboa Bldg., San Francisco.

Lit heaters last night burned them five hours sixty heaters per acre raised temperature five degrees within thirty minutes after lighting held same temperature until closed down we consider them a great success never received thermometer only wire and bill Rush thermometer.

T. H. TODD.

141 A. M.

Chico, Cal., July 26th, 1911.

Frost Prevention Co.,
San Francisco.

Dear Sirs:

In reply to yours of the 25th would say that there ought to be good sale for the Bolton Orchard Heater this year as they have proven a success during last spring's frost. I have used the heaters four years. In 1908 I had 80 per acre in apricot orchard, none in the almond orchard, just across the road. There was no sign of frost in the apricot orchard, and the almonds froze off clean. This year (1911) I had the heaters in the almond orchard and none in apricot. Apricots froze clean except a few in tops of trees 18 or 19 feet from ground. No sign of frost in almond trees. N. C. Jessee and A. Gee both used heaters with the same result. These three orchards contain nearly all the almonds for quite a large scope of country. I think this proves all you claim for the heaters. There was no need to use them in 1909 or 1910.

Yours truly,

(Signed) H. Losee,
R. 3, B. 141, Chico, Cal.

BEAR CREEK ORCHARDS.
W. S. Brooke, Manager.
Medford, Oregon, U. S. A.,
July 25, 1911.

The Frost Prevention Co.,
San Francisco, Cal.

Gentlemen:

Replying to your favor of the 18th inst., beg to state that we used about 3,500 of the Bolton Orchard Heaters during the past season and though there were several mornings that the temperature was as low as 24 degrees, we pulled out a crop of about thirty-five carloads from fifty acres. There were seven mornings, any one of which would have practically annihilated our crop had we not been equipped to fight the frost. We expect to equip another fifty acres for the coming season, and while we dreaded the magnitude of the undertaking, one hundred acres does not look as large to us now as fifty did before we undertook it. Yours very truly,

THE BEAR CREEK ORCHARDS.
By W. S. Brooke, Manager.

The Pioneer—Without a Peer

BOLTON ORCHARD HEATERS

BEST BY EVERY TEST

SOLD ON ITS MERITS

THESE TESTIMONIALS ARE IRREFUTABLE
SEND FOR OUR FULL CROP PROPOSITION

Frost Prevention Co.

107 So. Broadway
Los Angeles

Bank of Italy Building
San Francisco

F. H. HAMMER, So. Cal. Representative

CHERRY HILL FRUIT FARM.
The E. H. Everett Co., Owners. H. A. Albyn, Mgr.
Toboso, Licking Co., Ohio.
July 21, 1911.

The Frost Prevention Co.,
San Francisco, Cal.

Dear Sirs:

We used the small heaters for three evenings. We did not have the frost that we sometimes have, but cold enough that all blossoms where we did not use the pots were killed. We only lighted every third pot, which raised the temperature six degrees. Six hours has been the limit as to time of burning them. We used fuel oil from the Standard Oil Co. We have just tried an experiment with the crude oil from the well, as we have several wells of our own, and find that it burns equally as long as this fuel oil. Yours very truly,

H. A. ALBYN.

Owensville, Ind., April 3, 1911.

The Frost Prevention Co.,
San Francisco, Cal.

Gentlemen:

Am trying the Smudge Pots which I purchased from you one year ago, and meeting with success. Have used them two nights. It being a new thing in this part of the country, the newspapers are taking kindly to it and publishing results. Have had many inquiries regarding same. Would be pleased to have you send by mail one or two of your new attachments you wrote me about, to try in this community. Yours respectfully,

(Signed) P. S. ARMSTRONG.
R. F. D. 19, Owensville, Ind.

THE FIRST NATIONAL BANK OF ROSWELL.

Roswell, New Mexico.
W. H. Godair, Pres.
A. Pruit, Vice-Pres.
E. A. Cahoon, Cashier.
A. Hanny, Asst. Cashier.
C. Hobbs, Asst. Cashier.

July 10th, 1911.

Frost Prevention Company,
San Francisco, Calif.

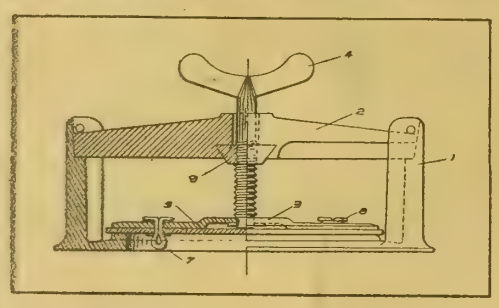
Gentlemen:

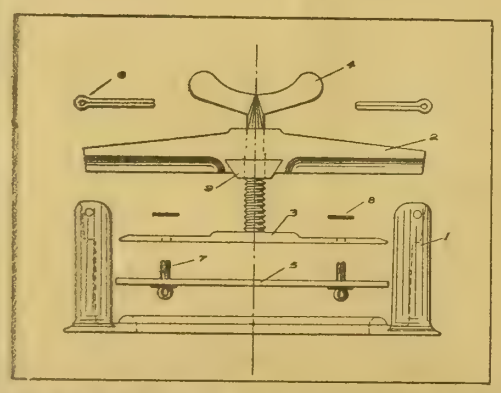
In reply to inquiry from your local agent, the writer begs to advise you that three thousand of your two-gallon Bolton Smudge Pots were used in his orchard during the past spring and were eminently satisfactory. While the cold weather here was not excessive, still the writer lit about one-third of the pots on three nights and found that number ample to control the temperature in his 45 acre orchard. By actual test, the pots burned from eleven to thirteen hours, according to the wind conditions. The writer selected this pot after testing out several of the most prominent makes.

Yours very truly,

(Signed) A. HANNY.

POMONA CIRCULAR VALVE





THE main object of the Pomona Valve is to construct a very cheap and simple valve, and one that requires no special tools or wrenches or experience to operate.

The Pomona Valve is constructed with non-corrosive parts, thus insuring a workable valve regardless of infrequent use. All fastening held in place by cotter pins, thereby making a very cheaply constructed valve and yet a very substantial one.

Valve Parts

1 Frame	5 Gasket
2 Cross Bar	6 Cotter Pin
3 Top or Lid	7 Cotter Pin
4 Brass Thumb Screw	8 Cotter Pin Washer
	9 Brass Nut

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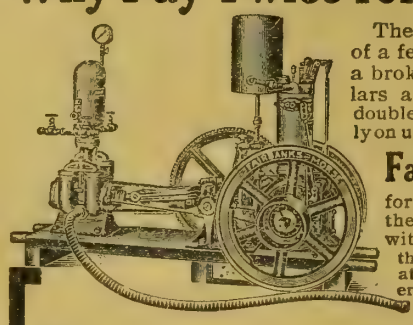
POMONA, CALIFORNIA

We have a complete stock at all times of both

Hand and Power Spraying Outfits

Our outfits have the most improved features and are the best to be had. Our improved Agitator will mix any solution that is mixable.

Why Pay Twice for Your Spray Outfit?



The lack of sufficient pressure or the loss of a few days' time in spraying season from a broken-down outfit will cost you many dollars at the end of the season—more than double the cost of your spray outfit. Is it safe to rely on unknown outfits when you can get a reliable

Fairbanks-Morse Spray Outfit

for almost the same price? They put you on the safe side and insure your crop. Equipped with the well-known **Fairbanks-Morse** engine, they give an abundance of power and operate at the lowest cost. Then you can use this powerful engine for your work, such as pumping water, sawing wood, etc. Operates on gasoline, kerosene, distillate or alcohol. Outfit can also be furnished mounted on trucks with tower and tank complete.

Mention this publication and send at once for new Spray Book No. SC 76

Fairbanks Morse & Co. Los Angeles, Cal.
Or address nearest of our 27 Branch Houses

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Water Tanks, Wine Tanks made from carefully selected stock by careful and experienced workmen. "Tanks that are well made last a long time." It will pay you to get my prices before buying.

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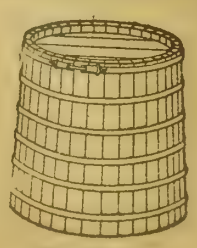

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An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch.

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Typical California-Bred Berkshire Gilt

May of Willow Creek 2nd, 147760.
Farrowed May 25, 1910. Weight July 25, 1911, 445 Pounds.
Owned by H. L. Murphy, Perkins, Cal.

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This illustrates the establishment where you will find the largest assortment of the most dependable

Implements, Engines,
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and All Other Goods
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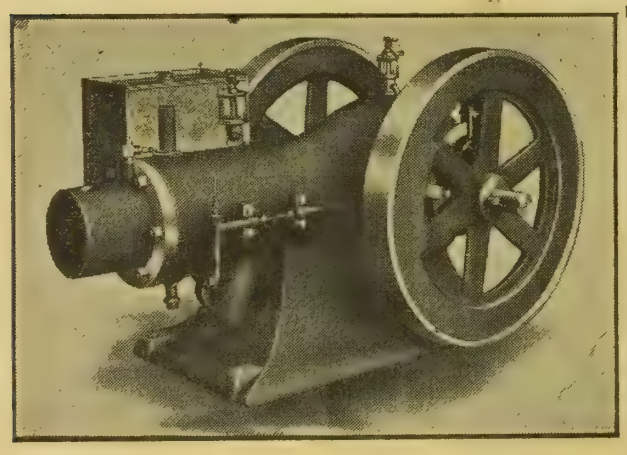
The Simple Gas Engine



NO Electricity, no plugs, sparks, and NO Carburetor; the greatest invention ever made on a gas engine. No other like it. Will operate on Distillate, Coal Oil or Gasoline. Cheapest in price, most economical to use; a child can run it. Send today for circular—it tells all about this wonderful ENGINE. Can be used for any purpose for which power is needed. Will run either right or left handed, and will run at any speed at which you set it. Two-cycle type. Send today for circular. This engine is years in advance of any other.

The Simple Gas Engine Co.

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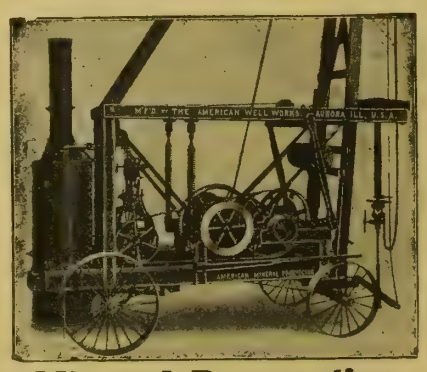

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Mineral Prospecting
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℅ AMERICAN PUMP CO. 341 So. Los Angeles St. Los Angeles, Cal.

VETCH and Burr Clover for Cover Crops

New crop Vetch Seed just arrived from Europe. Prices on application.

AVOCADO SEED

Fresh from the fruit. Ask for quotations on quantity required.

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IRRIGATION PROBLEMS

The continual cleaning-out of weedy ditches is but one of the disagreeable and expensive features of the old-style Irrigation Methods.

Why waste time and money in this way, or in costly experimenting, when the experience and advice of Irrigation Experts is yours for the asking.

The ***"K T System"*** will solve this, and all your Irrigation Problems. Just ask for the 6th Edition of our Brown Book (*free*).

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Petaluma, Sonoma Co., Cal.

California Cultivator

Vol. XXXVII. No. 8. LOS ANGELES: THURSDAY, AUGUST 24, 1911 One Dollar the Year

Do California Fruits Need Protection?

In a Trip to Southern Europe, G. Harold Powell, of the Citrus Protective League, Sees Things, and Gives to California Lemon Growers Some of His Impressions

During a recent trip in Italy and Spain several things were observed in connection with the orange and lemon industries which are of interest to the California citrus fruit grower.

The European Demand for Citrus Fruits.

There is a steady increase in the demand for oranges and lemons in European countries, especially for fruit of the higher grades. The exports of lemons to European countries have increased proportionately faster than to the United States during the last ten years. The exports of lemons from Italy have increased about 80 per cent in the last ten years. The exports to the United States increased about 75 per cent during the same period of time. The exports to Denmark increased approximately 3820 per cent, to Germany 250 per cent, to Switzerland 225 per cent, to Belgium 230 per cent, and to Norway and Sweden 210 per cent each during the same period of time.

The increase in the demand for lemons in Europe has raised the price of the fruit this year, Palermo exporters having to pay from five to ten dollars per thousand fruits laid down at the packing house during the last few months. No systematic efforts are made by the Italian exporters to develop the European trade, but it is the opinion of the leading exporters there that the foreign demand will increase even more rapidly in the future than it has in the past.

Tariff Causes No Increase.

The highest priced lemons are exported from Italy to Russia. All of the countries of Northern Europe receive grades similar to those that are shipped to America. It is interesting to know that in some of the countries that use Italian lemons exclusively where there is no tariff duty, and a freight rate of only about 30 cents per box, the retail price is practically the same as the retail price in the United States. The exports of lemons from Italy in 1910 were approximately 569,000,000 pounds, or the equivalent of about 20,000 California carloads.

The Spanish Orange Industry.

There are a billion pounds of oranges exported annually from Spain, half of which are consumed in the United Kingdom. There are probably a hundred thousand acres of oranges in Spain located mostly on the eastern coast in the Valencia province and in adjoining areas. The Spanish crop is marketed during the same period as the California navel crop, i. e., from October to June. The groves in Spain are under irrigation and intensely cultivated. In some sections like Alciras and Carcagente, the groves are cared for as well as the best groves in California. The pruning of the oranges is much more systematically done there than in California. The trees are more open and spreading and with much less fine wood than is to be found in a California navel or Valencia tree. The trees are generally headed three to four feet from the ground. The Spanish grower gives more attention to the individual tree than we do. An ailing tree is carefully examined, the roots are bared, and a root that is out of condition is cut off and removed. In many of the better groves, the soil was removed from the base of the tree, so that the hand could be extended under it. The large roots were exposed two feet or more from the body of the tree. A ridge of soil was raised around the basin to prevent the water touching the crown of the tree, thereby reducing the danger from root diseases.

The increase in the demand for lemons in Europe applies equally to oranges, the Spanish grower receiving this year about 20 per cent more for the fruit than for several years past.

Labor and Transportation Conditions.

The cost of labor in Sicily varies from one-fourth to one-third of the cost of similar labor in California. In Spain the labor is still cheaper. An ordinary man laborer is paid from 45 to 70 cents a day in Italy. Special kinds of labor are sometimes paid as high as 80 cents or even $1.00 per day. An ordinary man laborer in Spain is paid from 40 to 50 cents per day, the usual wage seldom running over 45 cents.

About one-third of the agricultural laborers in the citrus fruit district of Sicily are women. Women are also used largely in the packing operations in both Spain and Italy, the wages of women varying from 15 to 30 cents per day.

A considerable proportion of the labor is also made up of boys from 10 to 16 years of age. These boys are used both in the groves and packing houses, and are paid the same rate of wages as the women.

The cost of shipping a box of lemons from Italy to the United States is about three-elevenths of a cent per pound. From Spain to the principal distributing centers in Europe, the freight rate is still less. Sometimes it is not over a shilling a case; the case holding about two and one-half California boxes. This would equal a rate of about 10 cents a California box for the cost of transportation. From California it costs one cent per pound to transport the lemons to the principal centers of consumption and $1.15 per hundred pounds to transport oranges, plus the refrigeration charges on a considerable portion of the crop.

The Citrus Marketing System in Italy.

The citrus industry in Italy is founded on the speculative method of doing business. There are a few speculative exporters in Palermo who handle the bulk of the crop. There are a few speculative importers in New York who handle the crop in this country and whose interest and often whose identity is identical with the exporters of Italy.

There are a horde of small brokers in Italy between the exporter and the land owner. Five different profits or commissions are frequently included in the F. O. B. value of a box of lemons in Palermo. It is seldom that less than three profits or commissions are included in this value; the profit of the land owner, of the renter of the land, and the commission of the intermediate broker between the producer and the exporter, or of two brokers, where two frequently exist. The grower has nothing whatever to do with the marketing of the fruit.

Under the speculative system followed in Italy, there are no comprehensive marketing plans developed, the marketing following the usual course of speculative trade practices. When a dozen Italian lemons finally reach the American consumer, the latter pays from eight to eleven commissions or profits in the retail price. There is a wide difference between the price the consumer pays and the price the producer receives, the latter receiving from one-fifth to one-fifteenth of the former price.

System Not Good.

The present system of distributing and marketing the Italian lemon crop, both in Italy and in the United States, is similar to the method which brought general disaster to the California citrus producer fifteen to twenty years ago, and which led to the present comprehensive system of distribution and marketing.

The speculative system now in use in the Italian lemon business brought disaster on the Italian citrate of lime business, which is a department of the lemon business, and caused the government to take the marketing of the product out of the hands of the speculative interests and to establish through the Camera Agrumaria, in 1908, and by supplementary legislation in 1910, a government monopoly. Through a commission, the government fixes the minimum price to be paid to the producer for the citrate of lime, into which 40 per cent of the entire crop is converted, the minimum selling price also, and it markets the product for the producer.

The speculative system is said to have brought the lemon essence industry to a similar condition, and efforts are under way to induce the government to extend the authority of the Camera Agrumaria to the essence trade as well.

The Decay in Oranges in California in 1911.

Early in the present season the Citrus Protective League requested the United States Department of Agriculture to investigate the unusual decay that was then developing in oranges while in transit. It was believed by many of the shippers that the decay was due to the condition of the fruit and to the season.

A number of investigators were sent here by the department and a comprehensive investigation of the relation of handling methods practiced by the growers and shippers in 1911 to decay was made. A circular has just been issued by the Department of Agriculture, entitled "The Relation of Handling to Decay in California Navel Oranges, Season of 1910-11." The work of the Department of Agriculture corroborates the results of the earlier work in every respect, and shows that the decay is primarily the result of improper methods of handling the fruit.

In a season like the past, the fruit may be more susceptible to decay than in other seasons, but the work of the department shows "that even under unfavorable conditions, which prevail during the season, fruit may be handled with sufficient care to insure its sound condition on arrival at market."

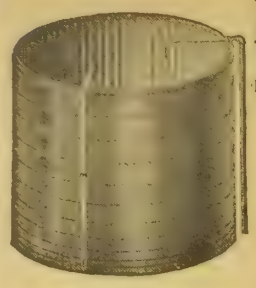
Every grower and shipper should send to the United States Department of Agriculture, Washington, D. C., for a copy of this circular.

The Lemon By-Product Industry.

About 40 per cent of the Italian lemon crop, or the equivalent of 20,000 California carloads, is converted annually into citrate of lime, lemon oil, and other by-products. One-third of the citrate, and about one-third of the oil is imported into the United States. There have been many attempts to establish a lemon by-product business in California, but up to the present time the efforts have not been commercially successful. Practically all the work in Italy is done by cheap hand labor.

In order to establish a by-product business in California methods will have to be worked out by which we can accomplish economically by machinery the results now attained in Italy by hand. The league is therefore interested in having established in California an experimental laboratory by the Department of Agriculture, through which the government and the industry can co-operate in an

(Continued on Page 172.)



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THE ART OF BUDDING.

By G. Ross Robertson, Mentone.

The article of my neighbor, Mr. C. R. Paine, on the renovation of the Australian navel leads me to offer a few suggestions in the line of citrus budding and especially topworking. Such suggestions may not prove of much value to a professional budder, principally because this sort of propagator has become adept enough in the art of the thing to cease bothering about the science of the operation. For the small grower, however, especially one new at the business, it may be a matter of interest to be familiar with the various details of budding on a small scale. Almost any grower of Washington Navels has occasion at times to remodel odd trees in his orchard, but considers it not worth while to call in a professional budder.

There seems to be a considerable percentage of fruit growers, and especially amateur gardeners, that look upon budding either as a solemn mystery or as an art to which a man must be born even as some sort of genius. Or perhaps we are told that it is purely a matter of luck whether or not "the buds take." In the midst of such sentiments, and with lots of other work to do, the grower in question drops his budding practice in disgust after his first magnificent failure.

It is not the point of this discussion to elaborate on the material used in the process; any good horticultural work will discuss that amply. In most of these works, however, the operation of placing the bud is passed off with the simple phrase "insert it," leaving the reader to guess how much bark to unpeel while he makes room for the bud-shield. Some writers advise the use of the flat bone or ivory tip of the budding knife to accomplish this purpose; others again warn the novice that he must not risk damaging the delicate bud by making it force its way under previously undisturbed bark. Such rules are all very well in their general application to the plant kingdom, or at least in cases where the buds are very tender and the bark tough or clinging. With citrus trees, however, the operation of lifting the flaps of bark with the knife is entirely unnecessary and, as in other plants, prejudicial to success. A higher percentage of "takes" will be to the amateur's credit if he uses the freshly cut bud-shield as a wedge to plow its own opening beneath and to the sides of the downward slit. A properly selected citrus bud is a comparatively tough piece of plant tissue. Any citrus stock which will not allow its bark to "slip" readily enough to admit the bud unbruised, is in no decent condition to bud any way. It seems to be of little importance whether the bud is slipped up or down from the cross slit, although it is considered by some a better practice to work from the bottom up.

At any rate we must again break away from the old country rule which says that the cross slit should be made straight in, at right angles to the stock. The right angle cut theoretically heals over quicker, but as a practical matter does not permit of insertion of the bud without previously lifting both flaps of bark with the tool. A slanting woodchopper's cut, sloping in the direction of the final position of the bud, allows the wedge point of the bud to slide down and eventually into place, even though the bark be quite thick. Where old trees are being top-worked, the operator will find that he has to deal with bark many times thicker than that on nursery stock; and it is here especially that the slanting cut proves of value.

An examination of the mode of heeling-in of buds will, I think, show the scientific value of slipping or wedging the bud as against the bone-handle method. Most of us are familiar with the fact that when growing bark is lifted, a longitudinal break is made through the central portion of the cambium or vegetative layer. The cambium is of course composed of delicate new-made cells, some of which have clung to the peeled-up bark, others to the wood proper, showing in both cases a yellow or cream color surface of slimy texture. A great many people seem to disregard the fact that the peeled bark retains a useful portion of the important cambium layer, thinking that it is necessary to adjust a bud to the wood-cambium only. On this principle it becomes only an incident that the bark flaps are folded down over the bud, as though they were "there because they were there."

Now the bud itself, if cut with a piece of its own wood attached, has both a bark-cambium and a wood-cambium layer, lying adjacent and undisturbed, The wood-cambium finds, on being slipped into place on the stock, a surface suited for immediate attachment; but the bark-cambium of the bud does not touch a corresponding surface if the bark of the stock has been torn up with a knife for some distance around the bud. It is a familiar fact that when the bark of a stock has been peeled up for any distance, the healing or callusing process starts at the point where the peeling stopped, i. e., at the farthest point from the bud. The soft callus tissue now works its way inward, finally reaching the bud, where it has an opportunity to unite with the bark-cambium of the bud. It is right here that so many failures in budding show up.

If the bud is not vigorous, or if there is a scant sap flow to keep it alive while the callus is traveling in its direction, the operation obviously cannot succeed. On the other hand, picture the condition where the bud has been forced to peel up the bark of the stock itself. This bark is only lifted at the point where the bud actually sits; the necessary callus growth is ready to start at once close in about the periphery of the bud section, and the union is successful. The same idea suggests other precautions:

In using the entering bud as a wedge, don't be so clumsy as to "wiggle" it about under the bark, thereby disturbing a large area of cambium. Make a single, straight, drive home, with no side trips. Never pull the bud back over the track over which it has been pushed; such an action only hinders callus tissue from reaching the bud tip; due to the presence of the hole from which it has been pulled.

Cut the bud slightly longer than the longitudinal slit in the bark of the stock; as the bud is slid along it will be forced to squeeze its way very

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If any doubt exists of the correctness of analysis furnished you, send a sample of the material to the Agricultural Department of the University of California, which will analyze it for you for the nominal fee of $1.00.

Fumigation with Cyanide involves a heavy outlay of money and (when inferior chemicals are used) too great a risk as to the effect on citrus trees, and the condition of the fruit, for any grower to remain uninformed on this subject, when authentic facts compiled by the United States Department of Agriculture may be had on application.

Bulletin No. 90, parts 1-2-3, of the United States Department of Agriculture, Bureau of Entomology, on "The Fumigation of Citrus Trees," "Chemistry of Fumigation with Hydrocyanic-Acid Gas," "The Value of Sodium Cyanide for Fumigation Purposes" are publications which should be read by all growers who have any interest in the extermination of the several varieties of scale.

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Chemical analyses have shown that practically all commercial potassium and sodium cyanide contains more or less common salt, which is technically spoken of as sodium chloride. The action of this salt in connection with fumigation demands consideration. It has been found that when sodium chloride is present in the reaction of sulphuric acid on a cyanide in the production of hydrocyanic acid gas that this chloride salt produces a secondary reaction which liberates an acid called hydrochloric acid; that this liberated hydrochloric acid immediately attacks the liberated hydrocyanic acid gas and decomposes it to a great extent. Hence, as the presence of sodium chloride in a cyanide produces a partial decomposition of the hydrocyanic acid gas when liberated, the ultimate result is that less gas is given off than from a cyanide of the same degree of purity which is free of it. The extent of the decomposition depends upon the amount of sodium chloride present. That this might be great is shown by the results of one experiment performed by the United States Bureau of Chemistry in which the decomposition amounted to little over 92 per cent of the total gas, only a little over seven per cent being evolved."

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"The results of these experiments bring to our attention a second consideration in the purchasing of a cyanide. That a cyanide be of a certain grade of purity is no longer the only consideration.

"It is of equal importance that the cyanide be practically free of sodium chloride. **I would condemn as unfit for use in fumigation any cyanide containing in excess of one per cent of sodium chloride.** Returning to the high grade sodium cyanide, it was found that this as well as the high grade potassium cyanide, contained only a fraction of a per cent of sodium chloride. It generally can be held as a safe consideration that a cyanide approaching chemical purity will contain not more than a trace of sodium chloride and that such a cyanide generally can be safely used, even though the degree of cyanide purity is alone known. I would consider as generally satisfactory for fumigation, a potassium cyanide 96 per cent or above, or a sodium cyanide 124 per cent or above. Chemicals of lower purity should never be used. Preferably the grade demanded should be a little higher than that given, or a potassium cyanide 98-99 per cent."

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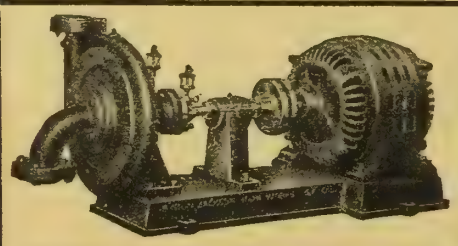

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tightly under the bark at the last quarter inch or so of the journey. Such a method will promote the good union of the bud tip. On the other hand, if the slit is cut for an indefinite length above or below the bud-tip, an unnecessary wound is made, allowing entrance of air or water.

Use well matured buds only, of course; but select those with wide bases of shields. A high, narrow and angular bud will lift thick bark so high that an undesirable cavity will be formed all about the bud, preventing the quick arrival of the callus growth. This note is of course applicable to budding large trees rather than nursery stock.

Finally, don't forget to use good waxed tape or cloth. Cover up the whole scene of operations, bud, slits and all. And don't start to bud at all until your knife is just a little short of razor sharp.

STATE WORK IN THE SOUTH.

We have from Prof. E. J. Wickson outline of the work of the Southern California Pathological Laboratory and the Citrus Experiment Station, and suggestion of work cut out. The work in the southern part of the state was recognized by the legislature of 1911 by granting $25,000 for the purchase of land and erection of buildings at the Riverside Citrus Station, also $4000 appropriation for the enlargement of the laboratory at Whittier, with another $3400 for barn, laboratory equipment, heating, furnace, etc. These sums are in addition to the usual legislative appropriation for maintenance. For this branch of the work the appropriation is $15,000 for the period of two years. It will in part be used for extension of research and experiment in the Imperial Valley. Regarding other work contemplated by the Station, Prof. Wickson writes:

"Work will be continued upon the "Brown Spot of the Orange" in an endeavor to obtain further knowledge in regard to the cause and means of control of this very obscure and troublesome disease. Investigation will be carried on upon a considerable scale in connection with the various more obscure diseases causing the deterioration of lemons. Such troubles as the "Red Rot," "Black Spot," "Pitting," and other similar effects upon the rind of the fruit will receive attention. Also certain fungus decays which are not yet thoroughly understood, particularly those caused by the so-called "Cottony Fungus" of the form known as "Gray Rot." Our investigations concerning the English Walnut, which have gone on for several years, will be continued, particularly along the line of developing and testing new varieties. In this work the object has been to obtain varieties more or less immune to the walnut blight and also having desirable commercial qualities. Other plant disease investigations will take up the matter of vegetable diseases, particularly those affecting the tomato, sweet potato and watermelon. All of these crops are troubled with serious and destructive pests. Study will be continued upon the "Crown Gall," one of the most serious diseases affecting fruit trees in this state. Such work will consist both in the study of the organism causing the trouble and its relation to various trees, and also work from the nurseryman's standpoint in connection with the possibility of growing trees immune to these diseases.

"In entomology work will be continued along the line of special studies upon citrus tree insects. In pomology considerable work is under way in connection with improving fruit varieties by selection, particularly in the case of citrus fruits, and also in introducing and propagating desirable new fruits for Southern California. Investigations are also being conducted upon the life history of our citrus fruits in connection with various questions affecting the development and nature of the fruit. It is proposed, during the coming year, to commence a special investigation of the relation of the citrus tree to soil conditions as affecting the health of the tree and the production of the fruit. This study will be carried on partly from the standpoint of the soil and partly from that of the tree. It will therefore involve the services on the one hand of the soil chemist, physicist and bacteriologist and on the other hand that of the plant physiologist.

There will also be continued soil investigations already under way in regard to soil fertility and treatment. This concludes the list of specific subjects of investigation, but in addition to those the Southern California stations will continue as in the past to carry on a large amount of other work of a routine or general nature in the way of minor investigations, field studies and examinations and handling of correspondence."

PROTECT CITRUS FRUITS.

(Continued from Page 169.)

investigation of these complex questions. It is probable that such a laboratory may be established here this fall.

Soil Conditions in the Citrus Industry.

The Citrus Protective League is also interested in having some of the orange and lemon troubles that appear to be related to the soil investigated by the United States Department of Agriculture, the investigations to supplement the extensive studies already in progress by the State University. As a preliminary step in this direction, the department has sent specialists to California to look over the ground and to determine whether the problems which confront the industry are of such a nature that they can be investigated by the department in such a way as to make the work supplementary to the investigations already in progress.

TWO KINDS OF FARMERS.

The Cultivator is in receipt of an article unsigned other than "H. A. H., San Bdino," which has to do with two kinds of farmers. It is a very good presentation of the contrast between the modern, up-to-date, brainy farmer and the "man who goes around with a long face, kicking because his crops are not a success, but has not the get-up and go to investigate and find causes. He is never ready to harvest crops when they are ready for him. His fodder gets too dry; his alfalfa blossoms and loses many leaves, etc." At the end the writer concludes that while the kicker lays his lack of results to luck it is in reality due to lack of brains which his more fortunate neighbor possesses. We do not believe it is a question of lack of brains so much as not utilizing those he has. All told, the article is a good one, but we wish to take issue with the writer in that he failed to sign his name. He also wrote on both sides of the sheets of paper. That is readily excusable, but the not signing of names to communications is so common that we take occasion to once more call attention to it. Many firms have a rule of looking first for the signature to a letter, and in its absence it promptly goes to the waste basket. This treatment of anonymous letters is entirely proper and must be understood by practically every one, yet scarcely a day passes but this office receives such communications. As we have said dozens of times, where one wishes his name withheld the wish will always be respected.

Live Stock and Dairy

Dairymen and stockmen are requested to write of their experience. Mrs. Sherman is always willing to answer queries and this, with experience of other workers, will make this department of greater value.

TWO KINDS OF SMITHS.

In a certain farm neighborhood in Wisconsin there once lived two farmers. Their farms joined, as the saying is. Both of the owners were named Smith, although they were unrelated. But they and their farms were so totally unlike that the neighbors fell into the habit of designating them as Slow-to-catch-on-Smith and Quick-to-catch-on-Smith. Finally for the sake of brevity, they were called Slow and Quick Smith. The fact that their lives and methods of farming were so typical of two distinct classes of farmers makes a brief study of the two somewhat instructive as an example of how the mind makes the man and finally the farmer.

Both men were raised in Pennsylvania of good old German stock, yet what a difference there was between them! Both came to Wisconsin after the Civil War and, so far as we can learn there was but little difference in their means at the start, except that Slow Smith had money enough from his father's estate to nearly pay for 160 acres of land while Quick Smith started with 40 acres paid for with money he had saved as a hired man.

Quick Smith always declared that he owed his success to the fact of having worked for ten years with one of the best farmers in the old Keystone state, a man who was a bright, well-read farmer in every respect.

Neither of the Smiths had any education beyond that of the country district school where they barely learned to read, write and cipher as far as decimal fractions. But after 25 years of living side by side, the contrast in their circumstances, in their intelligence, in the character and method of their farming, in their farm houses and other buildings and the fertility of their farms, as well as the quality of their live stock, was so marked as to become a matter of general comment.

After studying them awhile one day, we made up our minds that the neighbors had struck the secret and reason of this difference in the names they had applied to them. Slow Smith was truly slow in everything. He had learned but little since he got his first ideas of farming from his father. He was so conservative, so slow, that he was suspicious of every improvement, every new idea, every new kind of a machine so that it was noticed that he was about ten years behind his neighbor in the adoption of any change for the better and then most of the time he would do the thing in a botchy, half-way manner, showing that he did not comprehend the principle of the thing.

On the contrary, Quick Smith was always on the alert to study out some better way of doing things. He was a great reader on farm questions. This habit he learned from the man he worked for so long in Pennsylvania. Then, too, he had a quick, active mind, and he kept it active and strong by feeding it with progressive ideas.

Originally the quality of the soil of the two farms was about alike, a strong clay loam which readily responds to good treatment.

Slow Smith had a great contempt for reading farm papers and books. He used to say that "he didn't want any book farming in his," that the other Smith wasted too much time and money and that sort of thing.

Now all this time Slow Smith's farm was running down. He made no study of the soil, for he shut out all light from his mind on that subject. He ascribed the failure of his crops to the bad seasons. His cattle were of the same scrub stock he started with, except that he would occasionally buy a cheap grade Shorthorn bull. He said "Shorthorns were good dairy cattle for him." He was in debt to the extent of a $3000 mortgage on his farm.

Quick Smith was the exact opposite of Slow Smith. He had a splendid herd of grade Jersey cows, for he had always bought the best bull he could get, paying at one time $350 for one exceptionally good bull. He had a big machine shed filled with the best improved machinery, for he said "man help is scarce and high and we must do everything by horse power and machinery we can." But he took good care of his machinery. Slow Smith didn't. You could find plows, mowers, horse rakes, and a reaper, even, out in his fields, all winter long. He said he couldn't afford to build a shed.

Now to sum up—Quick Smith owns a 250 acre farm, well stocked, in fine condition, with splendid buildings, plenty of machinery and $2500 in the bank and he owns the mortgage on Slow Smith's farm. He has never said that he "couldn't afford" anything that made for the betterment of his farm.

Slow Smith has always followed the idea that he "couldn't afford" this, that or the other thing. "Get along without it as long as you can" has been his maxim. He can't afford papers or books. "They are no good," he said. Slow Smith has practically wasted his whole life. He has grown smaller in mind and fortune.

Quick Smith has gone ahead, built up his mind and judgment with good ideas; and good ideas, put into practice, have made him the man and farmer he is today. Both men represent two classes of farmers.

Now just a word as to the cause of these two widely differing results. There is a cause for every result. What made Quick Smith prosperous? The use of his mind. He proposed in the beginning to gather to himself all the useful knowledge he could get.

He could look around him and see the effect of poor farming everywhere. He could see just as well that the most successful farmers were the ones who made use of the best knowledge. So he proposed to get that knowledge. Part of it must come through reading. So he became a reader, and as he read, and studied, and worked, he grew in knowledge.

It is no new way. It is the way every man who succeeds in anything must travel in. His mind became quick to perceive right principles and right methods.

Why was Slow Smith so slow? Because he had educated himself by lack of knowledge to be slow. All unconsciously he had trained himself to think slow, work slow, and be slow. His mind was blank, empty of right knowledge. It was like his soil, losing the power to produce. In both soil and mind, where we put nothing in we will take nothing out.—Hoard's Dairyman.

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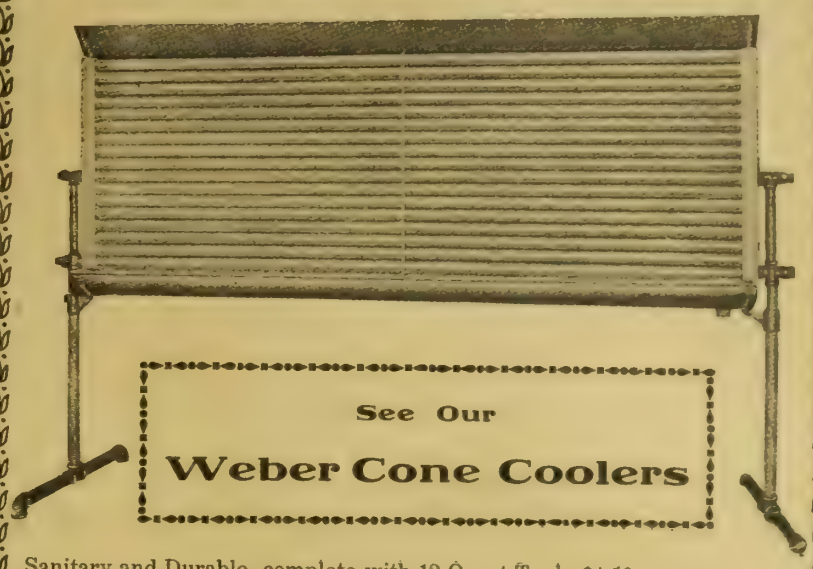

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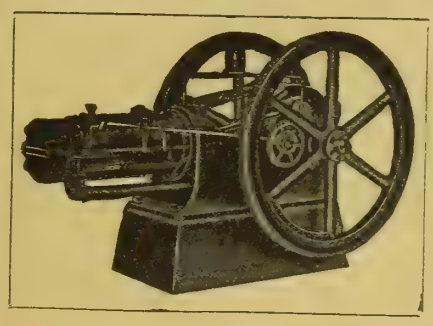

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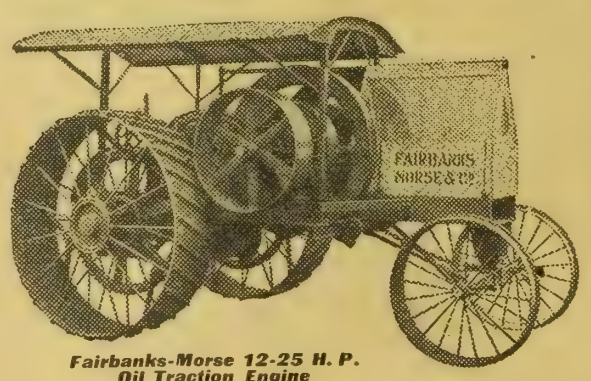

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A new road oiler tested out at Riverside recently is making good.

CERTIFIED BUTTER.

Provision Now Made for It by the State Law.

Leon M. Davis, in the Pacific Dairy Review, says:

"One of the bills passed by the State Legislature this spring was an act permitting medical milk commissions to draw up requirements under which 'certified butter' might be produced. This matter has been taken up, to a certain extent, in the bay cities, and there is at present some agitation stirred up regarding it. There may be those who are not familiar with the movement, and for these few the following notes on the matter may prove to be of interest.

"In the first place, what is a medical milk commission? Some years ago the matter of pure milk production was taken up in some of the larger cities, with the result that a board of commissioners was created, in whose power it is to certify as to the cleanliness and composition of dairy production. The work of the medical milk commissions so far has been devoted largely to the production of certified milk, and has been very successful along this particular line. At present there are several dairies in this state producing certified milk.

Certified Butter.

"Now, by the act of the recent legislature, it is within the power of such a commission to draw up requirements for the production of certified butter. This should not be interpreted as a compulsory act. It is not, but any creamery may take up the work. If it is desired to manufacture certified butter, the creamery must live up to certain requirements made by the commission, and it in turn will receive the certificate of the commission, which will be a guarantee as to purity of product. Thus we have the term 'certified butter.'

Requirements.

"Of special interest to the creamery man are the requirements which will be made to get the certification of the commission. The object of the entire movement, of course, is toward securing an absolutely pure article. Those of us who are at all familiar with the cream supply of today are aware of general conditions and that there is room for improvement. Every requirement made will be toward that end. A set of proposed requirements which was submitted to one of the milk commissions by originators of certified butter provides as follows:

"First—No cream shall be made into butter which is more than forty-eight hours old at the time of delivery to creamery.

"Second—Cream from which the butter is made shall be pasteurized in one of the following ways: First, at a temperature of 176 degrees Fahrenheit, or over, until a blue color appears, when the Storch test is applied; second, at a temperature of 160 degrees Fahrenheit for one minute; third, at a temperature of 140 degrees Fahrenheit for twenty minutes.

"Third—The pasteurizer must be provided with a recording thermometer and a temperature controlling device.

"Fourth—The starter used must be kept free from mold and dirt.

"Fifth—All utensils must be sterilized in a given manner.

"Sixth—Light and cleanliness of the creamery building and surroundings, water supply, etc., must be approved.

"Seventh—Butter fat and moisture standards are given for the butter.

"Eighth—Chemical and bacteriolo cal examinations of butter are to t made.

"Ninth—Weekly inspection of the creamery will be made, the expense of same being borne by the creamery.

"Tenth—Certificates of certification must be put on the butter."

NATIONAL CREAMERY BUTTERMAKERS.

The Executive Committee of the National Creamery Buttermakers Association held a meeting at the office of the secretary recently for the purpose of deciding on the location and date of holding their next annual convention. The committee voted unanimously to accept the proposition of the National Dairy Show Association, and the convention will be held Chicago, November 1, 2 and 3.

ARE INDIVIDUAL PUMPING PLANTS AN ADVANTAGE?

By H. U. Roeding, Foxcroft Bldg., San Francisco.

There still remains in many sections of the two main valleys of California, land not under intensive cultivation, on account of the absence of gravity water supply system, whose value and productiveness could be very materially enhanced, provided water could be obtained in adequate quantities to insure the growing of successful crops. The U. S. Geological Survey has spent considerable money and has prepared maps of some of these sections, showing from existing wells used for domestic purposes that the ground waters are located at depths, which in most instances can be tapped and pumped by machinery of standard construction. The cost of such apparatus is well within the means of the landowners, and when properly selected and installed, it increases the cost per acre of such lands only a small amount.

This increased price, however, is small compared to the additional value of the land when under irrigation and equipped with proper pumping machinery to allow watering of the various crops that may be grown.

Even in localities where gravity systems have already been installed, many of the farmers are aware of the difficulty of obtaining the water required, either due to an inadequate supply or the diverting of the flow by their neighbors located on the ditch above them. Coupled with these uncertainties, are the maintenance of these waterways, the annual tax for water and up-keep, as well as the loss of a considerable proportion of area on small farms required for main ditch lines themselves.

All of this goes to prove the value, especially to the smaller farmers, of independent and properly installed pumping equipments. On such land where an ample supply of underground water can be found, there is no question but that in every instance, it is greatly to the owner's advantage to install his own pumping machinery, rather than to depend upon the uncertainty of the annual rainfall or his local water company for supply. With a properly laid out and installed pumping plant, each individual farmer is absolutely independent and can irrigate as often and whenever his crop may demand water.

The art of manufacturing machinery suitable for these isolated plants for whatever capacity, has advanced to such a state that the cost of installation and operation is low and when correctly selected and installed to best meet the requirements of each individual case should not be the cause of any trouble or annoyance whatever.

There are many such plants operating at present, some of which are giving the best of service; others, however, have been discarded and condemned, due to errors in installing machinery not suited to meet the local conditions. Unless such pumping equipments are properly engineered, they are apt to cost their owners greatly in excess of their actual value, not only for the machinery, but for operation as well, and be the cause of constant trouble and annoyance.

Sawdust washed into Clover Valley Creek during storms of last winter has caused the death of great quantities of trout.

Sugar-Beet-Pulp takes the place of green grass and is the best butter producer in the world. 50 cents per ton at Los Alamitos Sugar Factory.

MEADOWS AND PASTURES.

A book with the above title may not appeal to Californians, for it is written in surroundings of which the preface speaks as follows: "I sit to write this book just as spring comes timidly sweeping over the land. Winter has been long and cold, the naked cornfields are sodden, gullied with winter rains; there is no hint of life thereon. Wherever the plow held sway last summer there is rueful countenance today. I look out across wide stretches of meadow and pasture land. There already the ground is covered with greenness, the tiny grass blades are pushing up, the clovers are coming, too, the soil is alive, the field is a living thing, robing itself with green. On the corn lands there has been waste during winter. The rains have washed, the fertility has leached away. Not so with the fields of grass and clover; they have more than held their own; they are richer, not poorer, for the lapse of time."

It is true that California has but few meadows, as they are called in the East, though we do not see why the word, meadow, does not apply to an alfalfa field as well as to timothy, but sure it is the word is not common in this state. Notwithstanding that, the general fund of information contained in the book about grasses makes it invaluable for any library. Our own money maker, alfalfa, is given extensive treatment; even its irrigation is touched upon. Many others of the legumes are also fully described, and the best methods of securing the greatest returns from them are given.

The book is written by Joseph E. Wing, the author of "Alfalfa in America," one of the standards on alfalfa; published by the Breeders Gazette, 542 Dearborn street, Chicago. The price is $1.50 postpaid.

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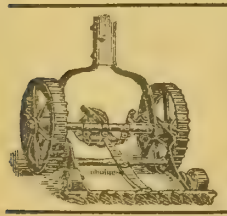

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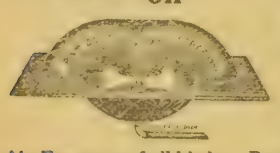

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The grape packing season of the Imperial Valley is ended. El Centro's output was 20 cars, four greater than last year. The Fresno packers who went to handle the crop have returned.

Deciduous Fruit Culture

LOCAL HISTORY OF THOMPSON SEEDLESS GRAPE.

J. W. Mills, Marysville.

There has been a good deal of discussion in the local newspapers recently concerning the origin of the Thompson Seedless Grape. The discussion began with an article by a county horticultural commissioner, when he claimed that this grape was originated by Mr. J. P. Onstott of Sutter County, the claim being made that it was one of three chance fence corner creations that made their bow to the horticultural world on Mr. Oustott's farm.

All viticulturists who have made a study of the history of varieties know that the Thompson Seedless is none other than the Sultanina, whose origin is so far back in the dim past that history has failed to discover it. It originated some place in the old world, and that is all we know about it. It was first introduced into the United States by some Eastern nurseryman, and from there to California.

Below we give a few excerpts from data collected by Mr. W. R. Nutting and kindly forwarded me by Hon. H. P. Stabler of Sutter County. This gives the local history of this valuable grape, and gives credit to whom it is due. This is taken from personal interviews between Mr. Nutting and the pioneer growers of the Thompson Seedless Grape in Sutter County.

"February, 1892. R. C. Kells, County Horticultural Commissioner: I was about the first man who had the Thompson Seedless Grape here. The cuttings were given to Dr. Chandler by Mr. Thompson, who got them from the East. Mr. Thompson was at our place, wanting to get some Zante Currant cuttings, and gave the doctor those cuttings of the Thompson Seedless, and he gave them to Mr. Onstott."

(Mr. Kells was at this time in the employ of Dr. Chandler, and afterward became owner of the Chandler vineyards.)

"B. G. Stabler:

The reason I have planted this grape is that the cooking raisin business has not been overdone. Mr. Thompson got this grape in 1872 and had it in bearing in 1874. He got it from Elwanger & Barry. I got my cuttings from Mr. Starr. Mr. Onstott offered to give me all he had growing of these vines, as he found they were not good bearers, he having pruned them too short. It was a little peculiar how it was first discovered by Mr. Thompson that the vines should be pruned long. Mr. Thompson had one vine that ran on a bee hive and he let it stay there and did not prune it, and found that this vine bore much better than the others. The raisin was grown in this section for sixteen years before it was discovered how to prune it. Dr. Chandler had Sultanas growing four miles below Yuba City, and Mr. Thompson told the doctor about this grape and offered him some cuttings. One day Mr. Thompson brought the cuttings to him and the doctor gave them to Mr. Onstott, saying that he had seedless raisins. This is how Mr. Onstott came by them and how he claimed to be the original originator."

J. P. Onstott gave the address of Atmore & Son, Philadelphia, to whom he had shipped raisins, but refused to be interviewed to any extent.

"Wm. Thompson, Sutter City, Cal.

The first cutting (of Thompson Seedless) I ever grew were planted over in Dist. No. 70, and in 1874 the levee broke and washed them all out."

The above excerpts are from a copy of a stenographic report written by Mr. D. D. Green of Yuba City and transmitted to W. R. Nutting in San Francisco, on March 23, 1892.

In the early 80's the Sutter County Horticultural Society was organized through the efforts of Mr. B. G. Stabler, and it was at a meeting of this society that the grape was given the name of Thompson Seedless, in honor of Mr. Thompson who introduced it into this state and first discovered its merits. I was present at that meeting and took part in the proceedings and I think Mr. J. P. Onstott was also present. The proper name of the grape is Sultanina, with the two synonyms, Lady de Coverly and Thompson Seedless. It is entirely distinct from Sultana and is much superior to it. The great bulk of seedless raisins imported from Southern Europe every year under the name of "Sultanas," is none other than Sultanina or Thompson Seedless.

AMERICAN BREEDERS MAGAZINE.

Volume II of the American Breeders Magazine, published in Washington, D. C., begins with a number which is up to the usual high standard of that periodical. This publication is unique, in that all the articles printed therein have been specially prepared by members of the American Breeders Association. The subject matter covers a wide scope and illustrates in a remarkable way the varied activities of that organization. The subject of breeding and heredity is at present receiving considerable popular attention, and the presentation of its various phases in attractive and popular style, free from scientific mannerisms and technical expressions and in plain, everyday English, will greatly tend to still further stimulate public attention.

The fascinating subject of race improvement or Eugenics is recoginzed by two immensely important articles. In one, on "Heredity of Lefthandedness," by Dr. J. W. Jordan of the University of Virginia, the fact that lefthandedness is hereditary is made fairly clear. In a second, in form of a committee report, Dr. C. A. Rogers, Faribault, Minnesota, chairman of the Committee on Heredity of Feeblemindedness, writes on that subject. This will specially interest those who have had the privilege of reading Dr. Goddard's excellent article on "Heredity of Feeblemindedness" in an earlier number of the magazine.

Prof. M. W. Harper, Cornell University, N. Y., under the title of "Improvement in the Selection of Breeding Cattle Through Advanced Registry Records," throws new light on the value of performance records. In fact, this article is considered one of the most valuable contributions to breeding of dairy cattle in recent years. It is based on a study of the breeding of several thousand animals recorded in the Advanced Register. Figures are submitted which go to show that the certainty of transmission of the ability to perform increases with the number of advanced registry ancestors in an animal's pedigree. Some very instructive statistics treat of the ques-

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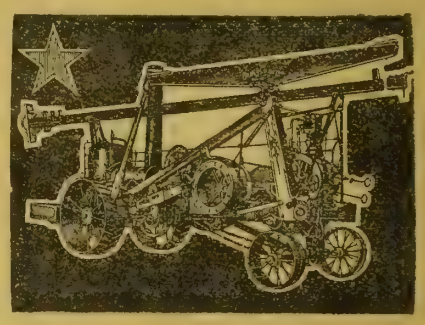

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tion of the relative male and female potency to transmit ability to perform.

The fact that this conutry imports annually $14,000,000 worth of Persian lamb furs lends peculiar interest to an article by Dr. Young of Texas on "Karakule Sheep." He shows how, by crossing Karakule blood on high grade long wool sheep, a brilliant and lustrous "Persian skin" can be produced in this country, and that the profits of this industry can be pocketed by breeders in this country.

The technical phase of breeding is touched upon in a paper by Prof. B. F. Roberts, Kansas Agricultural College, describing "A New Method of Open Pollination." And closely related to this subject is a paper by Prof. S. N. Green of the Experiment Station at Wooster, Ohio, on "A New Method of Handling Pollen."

Dr. Byron D. Halstead of the New Jersey Experiment Station mentions for the benefit of hybridizers and Mendelians a helpful device showing "The Use of Geometrical Figures in Plant Breeding."

Then there are editorial discussions on the relation of the larger breeding propositions to economics and to social welfare. Under the caption of "Notes and News" is mentioned a variety of corn specially bred to thrive and mature at an elevation of 6,000 feet; the use of certain symbols in the construction of eugenics pedigree charts; the importance of raising the second generation of a hybrid in order to get the benefit of new and useful combinations.

The magazine is abundantly illustrated, the details of figuring of the Persian lamb furs being shown by a number of excellent photographs.

USE OF FERTILIZERS.

Soil foods seem to be rapidly gaining in popularity or absolute requirement, or perhaps both, among the agriculturists of the United States. The total value of imported fertilizers, including materials largely though not exclusively used for that purpose, aggregated $40,000,000 in the calendar year 1910, against $10,500,000 in 1900, and $5,500,000 in 1890, according to figures compiled by the Bureau of Statistics of the Department of Commerce and Labor; while other reports covering the production of fertilizers indicate also a large and perhaps equally rapid growth in domestic output of the various materials used for fertilizing purposes. The production of phosphate rock, for example, largely used in the manufacture of artificial fertilizers, increased, according to reports of the Geological Survey, from $6,500,000 in 1904 to $10,750,000 in 1909; while the Census Office reports the value of fertilizers manufactured in 1890 at $39,000,000, in 1900 at $45,000,000, and in 1905 at $57,000,000, and if the rate of increase just shown with regard to the production of phosphates, a basic material in the manufacture of fertilizers, occurred also in the output of manufactured fertilizers during the period since 1905, the total production in 1910 was probably $70,000,000. Meantime the United States exported last year fertilizers to the value of $10,000,000, making the approximate consumption of soil foods by the farmers of the country about $100,000,000 per annum, omitting consideration in this connection of cotton seed meal, used in part as fertilizer material, but largely as a food for live stock.

The increase in importation of the more important class of articles used as fertilizers is indicated by the following figures: Imports of soda nitrate, or Chile saltpetre, have increased from $3,000,000 in 1890 to $5,000,000 in 1900, and to over $16,500,000 in the calendar year 1910. The imports of potash salts of the fertilizer class, chiefly the muriate and sulphate, have increased from $1,000,000 in 1890 to $2,000,000 in 1900, and six and two-thirds millions in 1910; while imports of phosphates, guano, kainit and other fertilizers have increased from over $1,000,000 in 1890 to $2,000,000 in 1900, and $9,500,000 in 1910.

The commercial sources of the elements chiefly relied upon as soil foods —nitrogen, phosphoric acid and potash —are comparatively few. Nitrate of soda, valuable because of its high content of nitrogen, comes almost exclusively from Chile, from which the imports amount to over 300,000 tons, valued at about $13,000,000, per annum. The potash salts are practically all the product of Germany, the imports therefrom of muriate of potash, valuable by reason of its richness in available potash, ranging from 200,000,000 to 400,000,000 pounds, valued at from $3,000,000 to $5,000,000, per annum. The imported sulphate of potash also comes chiefly from Germany, though smaller amounts are imported from Belgium, Austria-Hungary and Japan. Imported guano comes from a considerable number of countries, though mostly from Peru and Germany, smaller amounts being imported from the United Kingdom, Mexico, Netherlands, the Dutch West Indies, and, in some years, from Uruguay, Venezuela, and British possessions in Oceania. Of the imported crude phosphates Belgium, French Guiana and British Oceania are the chief sources; while of the other imported fertilizers not separately enumerated by the Bureau of Statistics Germany is the chief source, supplying from 70 to 80 per cent, the remainder being chiefly from the United Kingdom, Canada and Belgium.

Additional evidence of the increased consumption of artificial fertilizers in the United States is contained in the figures of the census, which show that the number of establishments devoted to that purpose has increased from 278 in 1880 to 553 in 1905; the tons of material used, from 727,453 to 3,591,771; and the value of their product from $20,000,000 in 1880 to $57,000,000 in 1905. The materials used by the domestic fertilizer industry in 1905 included bones, tankage, etc., $5,000,000; phosphate rock, $4,500,000; potash salts, $3,500,000; superphosphates, $3,000,000; cotton seed meal, two and one-third millions; pyrites, $2,000,000; kainit, nearly $2,000,000; nitrate of soda, $1,750,000; sulphuric acid, $1,000,000; fish, nearly $1,000,000; amomnia sulphate, a little over a half million; and various other articles, such as sulphur, lime, wood ashes and salt.

A writer in the Kansas Farmer says: "Last fall I smeared some trees with axle grease to keep the rabbits from peeling them, and this spring I found I had killed all the small trees. The bark was dead and black just as far as the grease went, although the tops started to grow."

During 1910 the United States exported 50,289 barrels and 72,311 boxes of apples to Hamburg, Germany. American apples are much appreciated in Germany and are bought by all classes of people.

The importance of a large humus supply to any soil cannot be overestimated, since it is upon this more than any other one factor that the productiveness of soil depends.

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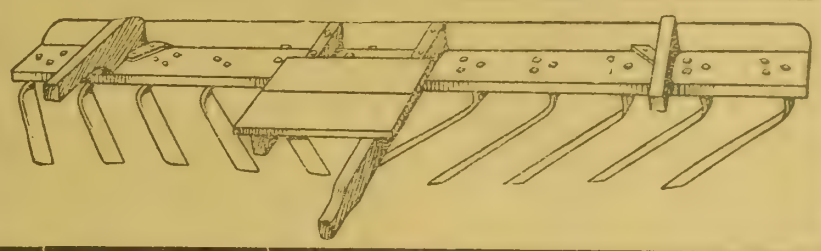

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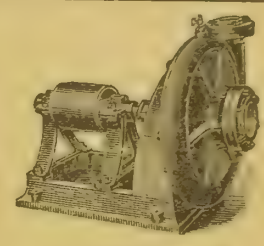

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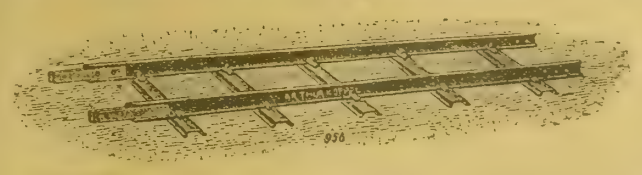

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SEPTEMBER RURAL.

Across the top of the cover of the September Rural Californian is "This Issue Sebastopol Apple Show," and underneath the usual title head is an illustration of Sebastopol's apple, the Gravenstein. As indicated by the quoted line, the Sebastopol Gravenstein Apple Show will be given particular attention. That show is on this week and people from many parts of the state are attending to gather information as to Sonoma County's apple growing possibilities. The Cultivator gave an extended review of last year's show, and in addition to the account given by the September number of the Rural Californian, the Cultivator will have something to say of this great section in a later number.

While we are referring to the Rural Californian, may we be permitted to call attention to this valuable magazine. The June number was largely given to cotton as grown in Imperial Valley and furnished a fund of information on the cotton industry which has been much appreciated. The July number had to do with sugar beets and the matter appearing in it has been considered of enough importance to be quoted in papers all over the state. The August issue was general in scope and contained matter of much interest. For the September issue the apple will be given the center of the stage, and some following issue will probably be given to Lima and other beans produced in this state.

The Rural Californian is a comer. It has been the effort of the publishers to put out not only a fully illustrated and handsome magazine of California rural life, but to give with this attractiveness a fund of useful information which will make it a power for good.

EUROPEAN LEMONS.

The first article in this week's Cultivator is most intensely interesting reading. It touches upon some of the points developed in a recent trip of Mr. G. Harold Powell, Secretary and Manager of the Citrus Protective League of California, which has to do with the more general matters which may make or break the citrus industry of this state. Realizing the fight which would be on, in fact, already commenced, in Congress for free citrus fruits or reduction of the tariff on citrus fruits, Mr. Powell has spent several months in citrus producing sections of Europe, collecting many facts which will be invaluable in the fight which will doubtless be sprung in Congress when it convenes on the first Monday in December.

The importers have provided an immense fund for use in the future, as it has already been used liberally, to secure more favorable consideration of the lemons of Sicily. The California grower must be awake to these facts, and to that end should read the article in this week's Cultivator.

SOIL INVESTIGATIONS.

A most interesting trip was begun from Los Angeles on last Saturday by a number of gentlemen of this state and two representatives of the Department of Agriculture of Washington, D. C., James Mills and P. T. Evans of Riverside, W. S. Guilford, Director of Agricultural Investigations on the holdings of the Sacramento Valley Irrigation Company at Willows, Glenn County; A. H. Grubb, Consulting Agriculturist for the same company at Carbondale, Colorado; L. J. Briggs, Soil Physicist from the Bureau of Soils, and H. L. Shantz, Soil Physiologist and Pathologist of the Bureau of Plant Industry, Mr. Mills and Mr. Evans, Jr., and two machine men. A few points in San Diego and Orange Counties were visited and on the return the whole citrus producing section of the southern part of the state. Later the trip will carry the party through Ventura and Santa Barbara Counties, crossing over the hills to Bakersfield and doing the San Joaquin Valley, both east and west sides. The Santa Clara Valley will also be touched and the Sacramento Valley, especially Willows, Oroville, Chico, Live Oak and on up to Tehama.

Messrs. Briggs and Shantz are securing general information as to effect of soils on condition of plants. Their work is preliminary and it is hoped will lead to the appointment of specialists who will come and make soil questions a special study.

NATIONAL AID TO EDUCATION.

We have a letter from Senator Carroll S. Page, also a draft of Senate Bill Number 3 introduced into the United States Senate in April by Mr. Page. The bill calls for an appropriation equalling one cent per month per capita to be used by the national government to aid in the education of the young of the country. Mr. Page says:

"We spend ten or twelve million dollars to build and equip a single battleship. The same sum spent for the boys who are to be our farmers and industrial workers, and for those girls who are to be our homemakers, would change the whole course of their lives and thereby materially benefit the nation.

"I believe that the expenditure of one cent per capita per month by the national government—and that is what my bill calls for—if expended under wise direction of a properly organized force, would put in motion the entire machinery which is outlined by my bill and which I feel confident will bring about the results so absolutely essential to the welfare of the great mass of the boys—and girls, too—of our land."

ANOTHER CONTEST.

Readers of the Cultivator may remember an account of an interesting contest of farmers in Glenn County in which a valuable Holstein cow and heifer were given as prizes for well kept and improved ranches on the lands placed under irrigation by the Sacramento Valley Irrigation Company. This contest was held in October and since that time the same and many other farmers have been preparing for another contest to be held the coming October. The company was so pleased with the results last year that the list of prizes will be materially extended. Just what they will consist of is not yet announced, but pure bred cows, hogs and chickens will all be offered. Mr. W. S. Guilford, in charge of agricultural experiment and instruction work for the irrigation company, informs us that the competition will be far keener this year than last, when its scope was not understood by the farmers, but the worth of the prizes offered and the spirit of emulation which it has instilled are working up a great interest. The date of decision is not yet announced, but it will be about the middle of October.

FARMERS INSTITUTES.

Farmers Institutes under the direction of J. B. Neff will be held in Lompoc, Santa Barbara County, September 1-2; Templeton, San Luis Obispo County, September 4; Nipomo, September 5; Guadalupe, Santa Barbara County, September 6; Santa Maria, September 7; Los Alamos, September 8; Santa Ynez, September 9.

CONSERVATION CONGRESS.

The Third National Conservation Congress will be held in Kansas City, Mo., September 25, 26 and 27. The general objects of the conservation congress, as set forth in its constitution, are to provide discussion of the resources of the United States as a foundation for the prosperity of the people, to furnish definite information concerning the resources and their development, use and preservation; to afford an agency through which the people of the country may frame policies and principles affecting the conservation and utilization of their resources to be put into effect by their representatives in state and federal governments. As the strength and prosperity of the American nation depend largely on the natural resources and the population of the interior, special attention will be given at this year's conference to the soil and to the maintenance and improvement of that fertility which brought settlement and wealth to the interior states.

In recent years the world's wheat crop has averaged slightly more than 3 billion bushels annually, of which about 8 per cent is exported from one country to another in the form of flour and 17 per cent in the form of wheat, making a total of about 25 per cent of the world's wheat crop which enters international trade. The United States exports about 52 per cent of all the flour that is shipped from one country to another, and about 11 per cent of the wheat. Including flour with wheat, the United States furnishes about 18 per cent of the total international trade in wheat, including wheat flour.

The mind trained to observe the little things in nature and keen to watch results of certain experiments, makes for success in farming as well as in any other calling. Too many farmers depend upon the rule of thumb or on getting information from others as to methods of procedure. With constantly depleting soils, with competition keener than ever, with greater skill required in marketing our products, all combined, there is a demand for more intensive culture. More intensive culture means more work, but the keen mind develops methods of accomplishing more with less work so far as possible.

Notwithstanding the continued drouth of late June and early July over nearly all parts of the East, the Crop Reporting Board states that the condition of cotton on July 25th was 89.1 of normal as compared with 88.2 on June 25th this year and 75 per cent on July 25th of last year. This is a good showing and apparently King Cotton will come through with flying colors this year. We may be pardoned for a bit of pride in calling attention to California's figures which show a condition of 99 per cent of normal. This is a decline of one per cent during the month of June 25th to July 25th.

The poultrymen of the state are vying with each other in telling big stories. The Cultivator reprinted one of these last week telling of an egg laid by a White Leghorn, seven inches in "diameter." Of course that was going some, but now comes a poultryman at Riverside who set two Rhode Island Red hens on 13 eggs each, which resulted in a hatch of 25½ chicks. If our poultry people keep on somebody may be induced to stretch the truth, although, of course, this has not been done yet.

Agricultural News Notes of the Pacific Coast

Northern California

Meridian, Sutter County, has hopes of a sugar factory.

This is the week of the Gravenstein Apple Show at Sebastopol.

One hop grower near Healdsburg is advertising for 600 hop pickers.

Butte County's olive crop will surpass that of any previous season.

Corning, Tehama County, will organize a poultry growers association.

Palermo, Butte County, is harvesting a large crop of Muir and Elberta peaches.

The Cannery at Santa Rosa has 350 people busy with the biggest run of any season.

Muscat vines at Oroville are carrying a fairly heavy crop of exceptionally fine fruit.

Upper Matole, Humboldt County, expects the early establishment of a new fruit cannery.

The Pomona Grange of Sonoma County is discussing the advisability of smaller grain sacks.

Davis and Woodland, Yolo County, are making a strong fight for a State highway through the Yolo basin.

Sacramento Valley hop growers expect to make fortunes from this year's crop, the prices being the best ever.

Waters of the Matole River in Humboldt County will be used for irrigation of sections heretofore unirrigated.

A big electric pumping plant has just been installed at Meridian, Sutter County, and will irrigate a large tract of alfalfa.

Rice growers at Biggs, Butte County, are compelled to employ duck herders to keep wild ducks out of the rice fields.

A new creamery at Gridley, Butte County, is now running on a full supply of cream and a fine product is being turned out.

A rancher at Tres Vias, Butte County, is pumping a thousand inches from the Feather River for irrigating a large tract of land.

The heaviest shipper in the deciduous line at this time, as shown by Sacramento reports, is the pear, with the peach a close second.

A contract has been awarded for construction of canal to carry the waters of Lost River so that a large tract of land will be reclaimed.

Officials of the Reclamation Service will visit the Orland project and it is now hoped that the Secretary of the Interior will visit the same project during September.

Residents of Lakeport, Lake County, are making an aggressive fight on undrained tule lands which are affording breeding grounds for numberless gnats and mosquitoes.

With the handling of great quantities of sugar beets and of fruit Yolo County's labor is proving too short for the situation. Japs and Hindoos are being called upon in the emergency.

The hop picking season at Wheatland, Yuba County, is now on in full swing and hop pickers' tents make the vicinity of many of the yards a busy looking scene. Some yards are so large that 1600 to 1700 pickers are employed at a time.

Central California

Malaga grapes have been commanding $1.50 to $2.10 per box in Philadelphia.

Delano, Kern County, will have a wheat crop of a hundred thousand sacks.

Drawbridges will be placed in the San Joaquin to permit of winter navigation.

The Spreckels Sugar Factory will begin its campaign on Friday, September 1st.

Prune growers are greatly elated over 5½ and 5¾ cent offers, four-size bag basis.

Fresno County shipments of Elberta peaches have been far heavier than anticipated.

Grain and fruit growers of Monterey County are appealing for more rigid enforcement of the squirrel ordinance.

The success of a few walnut orchards about Stockton, San Joaquin County, will induce large planting next season.

Thompson seedless raisins are reported to be exceptionally strong at Fresno at 6¼ cents.

One feature of the Fresno County Fair will be a $215.00 special prize for a five-day milking contest.

One shipper has sent from Hanford and Guernsey, Kings County, 16 cars of hogs to San Francisco.

The Fresno County Fair management announces purses to the extent of seventeen thousand dollars.

The Kings County Raisin and Fruit Company predicts a general price of five cents for Muscats in the sweat box.

A dam is to be placed across the Big Creek in Eastern Fresno County in order to impound water for power purposes.

Coalinga, Fresno County, is making an effort to secure Government aid in the building of a dam for reclamation purposes.

At the last meeting of the San Jose Grange the principal discussion hinged upon good roads and the use of water in preserving them.

P. F. Adelsbach of Kingsburg is working on a plan of organizing grape growers along lines similar to the California Fruit Growers Exchange.

Secretary Brooks of the San Jose Chamber of Commerce made an address before the poultry producers at the Nevada State Poultry Show last week.

Hughson, Stanislaus County, is making a fierce fight on the ground squirrel pest. There are eleven inspectors now observing the work in Stanislaus County.

Merced County Horticultural Commissioner is making a special campaign on Johnson grass, and is serving notice for immediate cutting before the pest goes to seed.

Fresh fruit shippers at Fresno are reported to be squirming from under contracts made earlier in the season because bad conditions in the east have lowered market prices.

Over 150 people were present at the last meeting of the Kings County Dairy Association. Constitution and by-laws were adopted and the association is now ready for active work.

Southern California

Some growers of apricots near Ventura report much heavier crops than last year.

Fierce forest fires were started in the San Jacinto Mountains near Banning last week.

The El Cajon Valley in San Diego County, observed last Saturday as a special fruit day.

The Tustin Hills Citrus Association is shipping oranges again after a rest to install a new grader.

Santa Barbara and San Luis Obispo Counties both report excellent showing on English walnuts.

Grape growers in Imperial Valley have just finished the most successful season yet experienced.

Orange County growers are being offered 14 cents for dried apricots, but some are still holding for the 15 cent limit.

Orange County estimates an output of about 200 tons of honey. Prices have been ranging from six to seven cents.

A gift of ten acres of valuable citrus land has been made by Riverside people to the University of California for citrus experiment station work.

The apricot growers of Orange County are elated over the $31.00 per ton which they have received for apricot kernels.

Reforestation on a large scale will be given a fair test in the great areas burned over in the mountains of San Bernardino County.

Northern Santa Barbara County people are anxious over the possible ravages of the Sisquoc River and efforts are being made to secure control.

Beaumont, Riverside County, now has a thriving Poultry Association organized to aid in the marketing of the products and the purchasing of supplies.

The vote on bonds for a protection district which will care for the storm waters at Arroyo Grande, San Luis Obispo County, carried by a large majority.

The Southern California Sugar Company's factory at Santa Ana made a record run last week when it produced in one day 1860 hundred-pound sacks of sugar.

The Mutual Orange Company of Redlands reports an average of $1.59 per hundred pounds on fruit shipped during the year. The later pools proved more satisfactory.

Walnut men generally are hoping for a 15 cent price on their crop this year but its large size is causing some to waver. Those in close touch with the situation, however, maintain that the association price will be 15 cents.

Apricot growers at Hemet, Riverside County, are elated over a return which it is said will average over $200 per acre return from their trees for the past five years. Some Hemet growers have realized between $300 and $400 per acre this year.

The Chino sugar factory is running about 800 tons of beets or 2500 sacks of sugar daily. The pulp drying department of the sugar factory of Chino, San Bernardino County, reports its new plant as working in the best condition and turning out a fine product.

The Coast

Toppenish, Washington, is shipping 35 cars of hay daily.

"Ideal harvesting weather" is reported from most sections of Oregon.

The State Grange of Oregon has drawn up a new highway bill and will urge that it be passed at the coming legislature.

One farmer at Weston, Oregon, has an average yield of 60 bushels of wheat to the acre.

An American Company with $25,000 capital is planting a tract of land near Zamboanga to rubber trees.

A hop grower at North Yakima, Washington, will clean up $12,000 on his 38-acre hop yard this season.

Fifty land owners at Glenwood have petitioned the Commissioners of Klickitat County for an irrigation district.

The Inland Empire of Eastern Washington is harvesting a far better crop of wheat than anticipated earlier.

The Deschutes Land Company will reclaim 31,000 acres of land situated in Crook and Klamath Counties, Oregon.

The Agricultural College at Pullman, Washington, has just received some exceptionally fine pure bred Tamworth hogs.

Shade trees at Baker, Oregon, are to be destroyed in order that wooly aphis and other pests may be wiped out of existence if possible.

Tests of wheat made at the University of Idaho at Moscow proved that wheat planted after peas or potatoes has been improved in quality.

A reserve of nearly 40,000 acres has been created by the Governor of the Hawaiian Islands. It is of forest lands on the Island of Hawaii.

A new high line ditch will be run by the Hanford Irrigation & Power Co. to reach a large tract of new land near White Bluffs, Washington.

Fruit growers of Spokane County, Washington, have organized a co-operative marketing organization. The first President is Daniel Klein.

Pear and apple growers of Walla Walla, Wash., are making a strenuous fight on the fire blight which is threatening the life of their business.

Notwithstanding the Northwest produces great numbers of swine, the Union Stock Yards at Portland is compelled to bring in hogs from the Middle West.

Alfalfa growers near North Yakima, Washington, and whose lands are on the Indian Reservation are receiving more than three times as much water as they did last year.

Scientists are investigating the manganese soils of Wahiawa district, Hawaiian Islands, and are endeavoring to discover methods of making more productive to pineapples.

Klickikat County, Washington, is rapidly filling its warehouses with grain which has been averaging this year about 20 bushels per acre. Some of the newer introduced hybrid wheats have proven satisfactory.

The last issue of the Hawaiian Forrester and Agriculturist reports, "Since last issue the public has been apprised that the Mediterranean fruit-fly has gained a shockingly long march upon the susceptible fruits of the Island of Oahu.

Animal Matter a Necessity For Poultry

Experiments at various State Experiment Stations have demonstrated beyond a doubt that Protein derived from an animal source is far superior, as an egg producer and flesh builder, to Protein derived from a vegetable source.

Our High Protein "Special" Beef Scraps Will Supply That Necessity

If your dealer cannot supply you, write us, and we will send you samples and price.

Made in California from fresh Packing House Products. Look for the word "Special" in red ink on every sack.

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We are agents for Coulson's Foods and Supplies

Baby Chicks are our Specialty

Correspondence solicited.

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PRICES ARE LOWER RIGHT NOW THAN AT ANY OTHER time of the year. If you need hens take our advice and buy them right now. We can supply fine young White Leghorn yearling hens at $8.50 and $9 per dozen. No matter how many you wish, we can supply them at this price right now. These prices are good this month only. In July and August hens are worth more. In September these same hens will be selling at $12 and $15 per dozen. Buy them now and make a big saving. Send today for catalog of prices on baby chicks of all kinds, hens and pullets, etc.

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112 East 8th Street, Los Angeles

Profit in the Poultry Yard

Practical poultry people who may have ideas from their experience as to methods of feeding and housing and general care of poultry will confer a favor upon the Cultivator and its circle of readers by sending in concise accounts. Mrs. Basley is always willing to answer queries, which with the experience of others should make this a most valuable feature in poultry life on the Coast. Opinions or matters of a personal nature should be omitted, but a concise statement of facts is always valuable.

DEVELOPING THE EGG-LAYING QUALITIES OF THE TURKEY.

W. N. Irwin of the United States department of agriculture, says the only reason this feature of the poultry industry has not been developed is that farmers have paid no attention to it. "I have been eating turkey eggs and turkeys for many years," says Mr. Irwin, "and have found them better than any other article of food. The thing that started me looking into the possibilities of the turkey was this liking for the eggs. For several years I have been haunting the central market of Washington three times a week and buying up turkey eggs. Most of the farmers who bring them to town to sell for food save the eggs for me. I have bought as many as 145 dozen in a year. In the spring, of course, I cannot get the eggs, since they are too valuable to sell for food. So I have found that the eggs can be kept very easily all winter. For example, I have some eggs now that I shall not eat until next March. But experience has shown me that turkey eggs kept for that length of time by ordinary means, will poach nicely. An egg that poaches is a good egg. I do not put the eggs in cold storage, but keep them cool and dry.

"I believe turkey eggs are as much superior to ordinary hen's eggs as is turkey meat to that of chickens. It took 200 years to get White Leghorns to lay 200 eggs a year and not many of them come up to that standard even now. I do not believe it will take anywhere near that long to develop 200-egg turkeys for there have been many changes and advances since experiments were begun with Leghorns. Besides I have found at least one man near Washington who had a 200-egg turkey and dozens who say they have birds that lay upward of 100 eggs. Even a 100-egg bird would be a distinct advance.

"The time has passed when the farmer can afford to raise turkeys for one setting of eggs. The man who told me he had a 200-egg turkey hen killed his bird for the market. I told him he killed at least $100, and he, of course, did not realize it at the time. One gentleman told me the other day that he has two turkey hens that have laid upward of 100 eggs this year and are still at it. He cannot get them to stop long enough to fatten them for Thanksgiving. I told him not to think of fattening them, for they are worth vastly more to him for breeding purposes.

"At the least calculation, a 200-egg bird should bring $25. If a farmer raised 100 such birds in a year, his gross income from them would be $2500. Such a breed of turkeys can be developed only by patient, careful selection from year to year.

"This industry must be undertaken with reasonable conservatism. I believe the results are certain, but persons who go into the work must expect to wait patiently for the promised results. If a farmer had from 50 to 100 birds that laid upward of 100 eggs a year, he would have no trouble in getting big prices for them. It would not be necessary to wait until the birds get up to the 200-egg class to make big money out of them for their laying qualities.

"The Rhode Island Experiment Station has become interested in the work. First, they started with eggs from birds that laid upward of 100, but for some reason the experiment failed. Now they are working with some young birds. I would advise any farmer who thinks of going into the work to start with young birds from late broods."

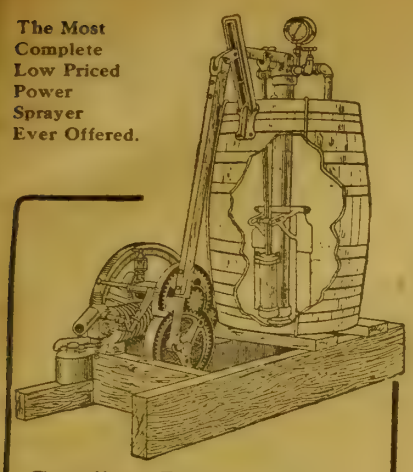
TO HASTEN MOLTING.

Every poultry raiser knows the value of having the hens out of the molting period before the winter season sets in, if there are to be any eggs for market while prices are high. And those who intend exhibiting their fowls at the fall fairs know that unless the fowls are through their molt and have their new feathers, it will be useless to show them and expect to win any prizes. Therefore a few lines on how to hasten molting will be of service to the farmer who wants eggs in winter and to the fancier who wants to exhibit his fowls.

Recently there was conducted at the West Virginia Experiment Station a series of tests for a method of hastening the molting period. This method consisted principally in withholding food, either wholly or in part, for a few days, which stops egg production and reduces the weight of the fowls, and then feeding heavily on a ration suitable for the formation of feathers and the general building up of the system. The experiments began August 5 with two pens of Rhode Island Reds and two pens of White Leghorns, about two years old. One pen each of Rhode Island Reds and White Leghorns received no food for 13 days, except what they could pick up in their runs, which had been sown to oats in the spring. These runs were 15 feet wide and 100 feet long, and nearly all the oats had been picked from the heads before the beginning of the experiment. The other two lots of fowls were fed as usual on mash, beef scraps, corn, wheat and oats. After the expiration of 13 days all four lots of fowls were fed liberally. Each lot of fowls contained 20 hens and two cocks. Thirty days after the test began, the "no-food" pen of Rhode Island Reds had practically a new coat of new feathers, had begun to lay and within a week from that time one-half of the hens were laying regularly, while the other lot of Rhode Island Reds were just beginning to molt and the egg production had dropped down to two or three eggs per day. Both lots of White Leghorns were a trifle slower in molting than the Rhode Island Reds, but otherwise the treatment affected them in the same way. The experiment proved that mature hens, which are fed very sparingly for about two weeks and then receive a rich, nitrogenous ration, molt more rapidly and with more uinformity and enter the cold weather of winter in better condition than similar fowls fed continually during the molting period on an egg-producing ration.—Kansas Farmer.

Few men understand the possibilities of two dozen hens, when worked up to the limit of their capacity.

The Most Complete Low Priced Power Sprayer Ever Offered.



Gasoline Power Sprayer

Complete Ready to Operate

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Equipment includes Sprayer with Bronze Plunger, Gland, Valves and Strainer, large Air Chamber and Positive Agitator operating with each stroke of the Pump, all mounted in a Barrel, with 200 lb. Pressure Gauge, Water Relief Valve, and Gate Valve on Discharge; Air Cooled Gasoline Engine with Batteries, Spark Coil, Fuel Tank, 25-feet ½ in. High Pressure Hose, 8 feet Iron Pipe Extension with Cock, Brass Y and Two Mistry Nozzles Uses only one pint of gasoline every three hours.

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Write today for our descriptive booklet.

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Please send particulars on Merced Colony No. 2

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Stimulate the hens to eat more by feeding a variety of foods.

THE SHOW BIRDS.

The birds intended for the show ring must be carefully selected. If one is not sure of himself it will pay to have some one, well up in poultry lore, to assist in this most important matter. After selecting the birds should be carefully studied and handled frequently to make them docile. They must be fed judiciously to get them in the pink of condition. No broken feathers, no lopped and scarred combs, no scaly legs will "go" in the show room, without a severe cut. It is early yet to separate them, unless one has ample room and accommodations, but a little later they should be cooped separately. The cocks and cockerels must be kept separate, now, if there is any tendency to fight. While not wise to coddle them too much, it is yet necessary to feed enough to insure standard weights. Pullets are in the pink of condition just before beginning to lay. Hens should be well moulted and full feathered, also cocks. Cockerels should also be in full feather and the feathers ripe, else, if white fowls, they show creamy tints. They should have a little meat, in some form, to ripen up the feathers. If the legs have any sign of scales, it is not too early to begin treating them. All parti-colored fowls must be cooped in clean coops.—Journal of Agriculture.

RHEUMATISM IN POULTRY.

Damp floors and walls bring on rheumatism. Throw open the chicken house on fine days and let the blessed sunshine in. Pure, dry air is much healthier than warm air highly charged with moisture. Rheumatism is almost never seen in flocks where the quarters are dry. A little common baking soda put in the water where the hens drink will help to prevent a leg weakness. Water fowls—geese and ducks—can not stand dampness in their quarters any better than chickens. A great many people ignore this fact. They imagine because ducks and geese like water they do not need dry sleeping quarters. They do not roost high up as do chickens, but prefer dry, clean straw to squat on at night. Where boards are used as a floor, there is apt to be more or less drafts from cracks unless a quantity of dry dirt or sand is kept on the floors. A scratching shed should always have a floor of earth. Such a floor is absolutely free from drafts. Cover it well with litter and you will then have no rheumatism among your fowls.—Exchange.

TO STOP THE CROW.

It is said to prevent the donkey's bray it is only necessary to tie down his tail. Now comes the daily paper with a dispatch from "Chi" with the following:

"'How to Stop a Rooster From Crowing' is the title of a pamphlet that has been prepared by William Luthardt, secretary to Chief of Police McWeeny of Chicago.

"Since the publication a few days ago of a story that told of the chief's success in supressing the rooster, the head of the police department has received scores of letters asking him to stop crowing roosters in all parts of the city.

"'Say, Billy,' said the chief to his secretary yesterday, 'we will have to answer these letters about the roosters.'

"Secretary Luthardt wrote the following instructions to owners of roosters:

"'This department has received several complaints from persons whose early morning slumber is disturbed by crowing roosters. It is natural for a rooster to crow, but in order to do so he must raise his head. A simple device to stop the bird from crowing is to nail a board twelve inches above the perch in the chicken coop. This will prevent the rooster from raising its head to the proper angle for crowing, thereby suppressing the clarion notes.'"

POULTRY NOTES

A drop of glycerine is a sovereign remedy for sore eyes.

Lawn clippings and green waste from the garden make good chicken feed.

Healthy, strong and vigorous breeding stock is necessary for quick growing, profitable market birds.

See that the old hens do not get away with the feed meant for the chicks. The chicks should be fed in a place for themselves, where the older hens cannot bother them.

A Canadian authority says that in his opinion the most profitable egg laying fowl will be found in the white or buff variety of the American class. As a class, he says, they will beat all comers.

Linseed meal is made by grinding flaxseed from which the oil has been more or less completely extracted. "Old process" contains more fat and somewhat less protein than "new process" linseed meal.

If you stop to look at it, a feather is a masterpiece of creation. The covering of a bird combines in a wonderful manner lightness and complete ventilation, a first-class non-conductor of heat, and repels dirt.

A drop of sweet oil on the head and under the wings of the chicks will generally be sufficient to keep them free from lice, though you can overdo the matter and kill the chicks by using too much grease or oil.

Lice are the bane of the poultryman's life in the summer time, and they must be eradicated from the chicks, the adult fowls and from the poultry house, to secure any degree of success in the business.

The old fowls should be dusted quite frequently during the summer with insect powder, though if you provide them with a suitable dusting place they will try mighty hard to keep themselves free from lice.

For some reason the Jews, in pur-

You know how sap keeps a tree alive and strong and defensive against weather. Trinidad Lake asphalt does the same in

Genasco

the Trinidad-Lake-Asphalt Roofing

The **Kant-leak Kleet** defends the roofing-seams against weather without cement. Prevents nail-leaks.

Ask your dealer for Genasco mineral or smooth surface guaranteed roofing with Kant-leak Kleets packed in the roll. Write for the Good Roof Guide Book and samples.

The Barber Asphalt Paving Company

Largest producers of asphalt, and largest manufacturers of ready roofing in the world.

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RED FEATHER POULTRY YARDS

WINSLOW'S REDS

Annual Reduction Sale of Stock and Eggs.

Send for price card

DR. CHAS E. WINSLOW
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Bx. 368 Cor. Charlotte & Greystone

Monrovia, Cal.

Pekin Ducks For Sale

SPECIAL—A choice lot of this season's breeders at $4.00 per trio or in lots of six or more $1.00 each; Drakes, $1.50.

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Dried Milk for Fowls

Nothing better, especially in hot season; nearly 50% protein. Special prices for short time only:

Harding's, $3.50
Casein Co.'s, $3.50
Bent's, $3.75

5 Sacks 15c and 10 sacks 25c less

WEST COAST SEED HOUSE

111, 113, 115 WINSTON ST. between 4th and 5th near Main. **LOS ANGELES**

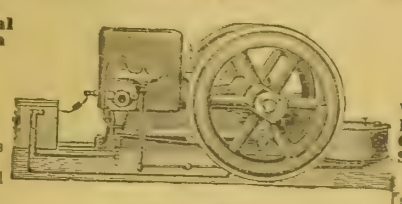
Catalogs of Everything for Poultry and the Garden

WITTE DISTILLATE ENGINES

The Best General Utility Engine on the Market.

2-H. P. $75.;
4-H. P. $125.;
6-H. P. $160.;
8-H. P. $225.;

Guaranteed for 5 years to deliver the actual horse power as stamped on the name plate.



An up-to-date engine; snappy, vigorous and powerful. Simple, reliable and durable.

WHY PAY HIGHER PRICES WHEN WE CAN GUARANTEE SATISFACTION.

Write for particulars, stating size wanted.

Norman B. Miller, Machinery Merchant

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Pump Jacks, Pumps, Belting, Etc.

chasing geese in the market, prefer a bird with a yellow or an orange-colored bill. So long as they can procure a light-colored bill they will not purchase the geese with the black bills.

The poultry house should be sprayed with whitewash several times during the summer to keep the house in good condition for the fowls. The roosts and nest boxes should be taken outdoors and given a thorough spraying of kerosene oil in which has been mixed some crude carbolic acid.

Gluten meal and gluten feeds are by-products left in the manufacture of starch and glucose from Indian corn. The waste product from the manufacture of starch or sugar is relatively much richer in oil and protein than corn. Many factories are removing part of the corn oil from the waste, so that some gluten meals carry but little oil.

It is said that the calico printers use more than 40,000,000 dozens of eggs each year, and that the coffee roasters and photographic trades, the cracker and biscuit combines and the chemical trades consume more than twice as many. Large quantities are also used in the leather trades, for tanning, etc. They are also largely used in the preparation of many patent foods, and the liquor trade takes no inconsiderable number. For many of these uses, inferior grades of eggs are used—not because they are better, but because they are cheaper. One biscuit company in New York city buys 4,000,000 eggs every week.

When the hens quit laying for the season it should be obvious to everybody that it is unprofitable to longer keep them. But the general run of poultrymen and farmers fail to recognize this point and keep several dozen unprofitable hens around the place. Chicken feed is very high in price, and it is a waste of money to feed non-producing stock, for you cannot get any more for them two or three months hence than you can now. The best thing to do is to sell all poultry that is not actually wanted as breeders for next year. The growing stock need not be disposed of, for they increase in value with age and weight. If these old hens are thoroughbred stock, they may be sold to other breeders for next season's use at a higher price than could be secured at the butcher's, but if the hens are common stock sell them at once to the dealer at whatever price you can get for them, for every day you keep them after the laying season is over you are losing money by them, and the old saying is true that "a penny saved is a penny earned."

DRESSING SQUABS FOR THE MARKET.

One half dozen or more squabs are hung on the rack at one time. The wings of each are then locked, which is done by drawing the wings closely together in the back, allowing one wing to overlap the other. It holds them firmly, and causes no pain.

The mouth of the squab is held open with the thumb and first finger of the left hand, the head and shoulders being held in the hand. With a knife in the right hand, the blade is inserted through the crown of the head, penetrating the brain.

At once the operator releases his grasp and allows the bird to bleed thoroughly before starting to pluck the feathers.

By the time about half a dozen of the birds have been stabbed, the first killed has bled sufficiently to be ready for picking. The squab is then removed from the rack, and held in the hands while plucking the feathers.

This method is said to be the most rapid, it being found that from 100 to 150 squabs can thus be dressed in a day by a good operator.

Some pigeon men believe in holding the bird while killing, but it has been proven that birds do not bleed so thoroughly as when hanging, owing to the fact that the hand more or less compresses the fine veins, thus retarding the flow of blood.

When a bird is not sufficiently bled, it shows itself in blisters. These blisters are red blotches that form on the backs of the birds, and which develop by the time the carcasses reach the market.—Farm World.

Speaking of chicken pox the department of agriculture says: The disease appears on the comb, face and wattles of the bird in the form of yellowish nodules, varying in size from a pin head to one-fourth of an inch in diameter. These nodules increase in size and turn dark red. The disease should be treated as soon as the first nodules are noticed. It is not always fatal and fowls have been known to recover without any treatment. Insanitary conditions and dampness seem to cause the disease. As it is a contagious disease the affected birds should be removed from the flock immediately. If the nodules are removed with a sharp knife, and the affected parts are treated with carbolated vaseline, the birds should recover in a few days. If the case is very far advanced the sick fowls should be given a few grains each of sulphur and cream of tartar three times a day. Oxide of zinc ointment should be applied to the affected parts once a day.

It costs about six cents to raise a squab to five weeks of age.

Veterinary

Answers in this column by Fred G. Matthews, M. S., D. V. M., 1232 Central Ave., Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Catarrh and Cough.

My mare contracted a cold about three weeks ago. There is some discharge from the nose, labored breathing with nostrils dilated and coughing by spells. She has a good appetite, but does not improve under the treatment I give her.—Subscriber, Orange.

The cause of this trouble cannot be determined from your description. Secure eight ounces of Fowler's Solution from your druggist and give one tablespoonful in the feed morning and evening.—F. G. M.

Lump and Worms.

A movable lump under the jaw of a cow was opened about three months ago, but after discharging a while it broke again. The discharge consists of a thick matter. The lump is supposed to have been caused by beards in the hay. A worm passed from her a few days ago. She has a good appetite, but is poor in flesh and the milk yield is reduced though apparently normal. Can this be worms, and should we use the milk?.—Subscriber, Anderson.

Worms may be the cause of the debilitated condition; however, there is no certainty that other tumors, similar to the one under the jaw, do not exist within the body, impairing nutrition. For worms, give a drench containing one pound of Epsom salts and follow after 24 hours with three ounces of turpentine in a quart of sweet oil. Then give, twice daily in the feed, one tablespoonful of a tonic powder containing fenugreek 6 ounces; gentian, 4 ounces; nux vomica, 2 ounces, and dried sulphate of iron, 3 ounces. Should the cow fail to improve under this treatment it would be advisable to discontinue the use of the milk.—F. G. M.

HEALTHY CHICKENS produce BEST RESULTS

SPECIAL QUOTATIONS FOR SUPPLIES IN QUANTITY.

Lightning Chick Grower and Egg Producer is the strongest Egg Food on the market. One tablespoonful to 12 chicks or six hens, mixed with their regular rations, is sufficient. Acts as a tonic and bowel regulator.
50 lb. sacks $4.00
25 lb. sacks 2.15
10 lb. sacks ..... .95
5 lb. sacks ..... .50

Stayco Chick Feed, a perfectly balanced ration for chicks and laying hens.
100 lb. sack $2.60

Beef Scraps, Proteinized. This compound is equal in feeding value to 1¼ sacks of straight beef scrap. Each sack of 100 lbs. contains 50% best quality beef scap, 25% of eggs (twice richer in protein than beef) and 25% of vegetable meal or vegetable protein.
100 lb. sack $3.10

Beef, Blood and Bone Meal, a properly balanced ration.
100 lb. sack $2.65

Blood Meal—
100 lb. sack 3.50

Bone, Ground, 3 sizes—
100 lb. sack 2.15

Bone Meal—
100 lb. sack 2.25

Alfalfa Meal—
100 lb. sack 1.20

Charcoal, 3 sizes—
50 lb. sack 1.10

Chili, Ground. Should be included in all rations, especially in cold weather.
100 lb. sack $6.50
50 lb. sack 3.50
25 lb. sack 1.88
10 lb. sack ..... .80

Milk, Granulated. Concentrated skim milk, dried and ground to about the size of cracked grain. Can be fed dry in a hopper, or in a mash; use about 20 per cent of the milk to 80 per cent soft foods. Use 1 per cent Lightning Egg Producer as a tonic.
100 lb. sack $3.75

Oil Cake Meal—Best Eastern—
100 lb. sack 2.80

Oil Meal Caproco—
100 lb. sack 1.45

Rice, Broken—
100 lb. sack 3.00
50 lb. sack 1.60

Rice Bran—
100 lb. sack 1.75

Oyster Shell—Eastern, ground and screened to a uniform size—free from dust and dirt.
100 lb. sack $1.25

Clam Shell—Medium—
100 lb. sack ..... .75

Mica Grit—Chick, medium and coarse.
100 lb. sack ..... .75

Marble Grit—Chick size—
100 lb. sack 90

Salt, Coarse—Chick size—
50 lb. sack ..... .35

Hydrated Lime—
100 lb. sack 1.25
50 lb. sack ..... .70

Powdered Sulphur—
100 lb. sack 2.75

Sunflower Seed—
100 lb. sack 5.40
50 lb. sack 2.80
25 lb. sack 1.50

Millet Seed, German.....5 lb. .35
Hemp Seed .....5 lb. .40
Rape Seed, German.....5 lb. .55
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Dog Biscuits—

	Doz.	Each
Dog Biscuit—Spratt's.....	$2.65	$ .23
Cat Biscuit—Spratt's.....	2.65	.23

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All of the Poultry and Stock Foods we quote are balanced rations of the best grade, properly blended and compounded to get the results looked for in the shortest time possible. Remember they are sold with our absolute guarantee of satisfaction or money refunded.

STAYCO ROUP CURE

A guaranteed preventive and cure for Roup. If it fails, we refund your money. Roup is indicated by a watery discharge from the eyes and nostrils, and if not checked, the head will begin to swell. Stayco Roup Cure is a positive cure.
50 cent size $0.35
$1.00 size ..... .65

STAYCO CHOLERA CURE

After testing many different cures, we have found the Stayco Cholera Cure most effective. It is the best cholera remedy for turkeys. It prevents and cures roup, diarrhoea, cholera and other poultry diseases.
25 cent size $0.20

STAYCO LIQUID LICE-KILLER

Kills lice on poultry without contact with the fowls. Spray the inside of the chicken house—fumes do the work, and not injurious to poultry.
1 quart $0.25
½ gallon ..... .40
1 gallon ..... .65
5 gallons 2.75

INSECT POWDER

For setting hens, young chicks and the dust bath. Death to all vermin. Not intended to take the place of Stayco Liquid Lice Killer, which is always needed in this climate.
2½ lb. package $0.31
5 lb. package ..... .55

STAYCO SQUIRREL POISON

Composed of poisoned grain for the destruction of squirrels, gophers, rats, mice, etc.
1 lb. package $0.16
5 lb. package ..... .70

STAYCO BEDBUG KILLER

Liquid—Non-Poisonous

As the name implies, it is non-poisonous. It is also very efficient and safe, if used away from fire and open lights.
Per gal.....$1.75 Pint .....$ .35

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Questions and Answers

THE EDITOR AND STAFF

Pruning Melon Vines.

I noticed in recent Cultivator statement that an Imperial melon grower had increased production of cantaloupes per acre by planting much closer together and following a system of pruning. Will this farmer be kind enough to give to us his method in the columns of the Cultivator?—Subscriber, Long Beach.

We hope this request will meet the eye of the Imperial grower and that he will favor us with the information. The item in the Cultivator was secured from an Imperial Valley paper which was immediately destroyed, and we do not know the name. We assume that the method consists in planting much closer together than usual, then by thumb pruning or pinching back preventing extended growing and inducing greater production of fruit near the root.

Cucumber Pickles.

Can any subscriber give me information regarding putting down cucumber pickles for home use that will be brittle. I have been in the habit of using rock salt and grape leaves for covering between pickings, but in spite of all they are soft.—Mrs. C. A. R., Gridley.

The grape leaves are of no value in making brittle or firm pickles, but to aid in preserving the green color which the strong brine dulls. The green color may be secured by scalding the pickles in vinegar in brass kettle, but this is not considered a perfectly safe proposition. Other factors of success are use of perfectly fresh cucumbers, not bruising, and some have added a tablespoonful of powdered alum to a gallon of brine. This is not seriously harmful, but with care we do not believe it is necessary, though it gives crispness and brittleness. For more particulars of the method see household page this week.

Citron.

How is the ordinary candied citron used in fruit cakes, etc., produced and prepared?—Mrs. F. H. V., Earlimart.

Citron is produced in the same way as lemons, pomelos or other citrus fruits, though it is generally considered more susceptible to cold weather. There are several orchards in Southern California but we do not know of any in the San Joaquin Valley. The fruit is very large and of course almost entirely composed of the thick rind which is made into the candied citron. The small amount of pulp is scooped out and thrown away after the fruit has been halved. The citron is then submitted to brine bath for several days or weeks. After this treatment the saltiness is removed by the use of pure water. Then it is placed in a weak syrup, later in stronger ones finally in a very heavy syrup. From this it is taken and placed upon trays where the surplus moisture is evaporated. We may add that lemon and orange peel is often treated in the same way and makes excellent additions to cake, mince pies and other similar dishes.

Tomato Blight.

My tomatoes are dying. The plants are set in soil well enriched with barnyard manure and were all right until blooming period when the leaves dried up. They have abundance of water. There are four other varieties in the same row, however, which are not showing the trouble and are now bearing well.—J. C. N., Highland.

This is doubtless a straight case of summer blight, for which there is no remedy as the trouble is at the root. The abundance of water referred to only makes matters worse. In fact, some maintain that if water is withheld and the vines forced to endure a little drouth, they are less liable to blight. It is a bacterial trouble and once within the tissues of the vine, no spraying or root treatment will reach it. The fall blight which strikes plants soon after the warm rains may be prevented by Bordeaux spraying, but we believe that trouble has not yet begun. Another year preventive methods may be taken, such as securing new ground on which tomatoes have not been planted, omitting the stable manuring, and making sure that plants are set which are not already infected with the blight.

Applying Phosphoric Acid.

What is the best way to obtain phosphoric acid for fertilizing prune trees, and how should it be applied? Am planning to sow muriate of potash and phosphoric acid before planting the cover crop of field peas.—A. B. S., Campbell.

There is difference of opinion as to the best source of phosphoric acid. Personally we would prefer the simple ground bone or rather bone "flour." Next to that we would use the ordinary raw ground rock phosphate. It must be confessed, however, that some of the very best orchardists of the state are still using superphosphate or rock or bone treated with sulphuric acid. Without question the superphosphate is more readily available, giving quicker results, but usually the application of untreated rock or bone will accomplish same results, costs but little more and the results will be obtained for years. It may be applied by drilling in preceding seeding, or broadcasting, at the rate of 400 pounds per acre.

Curtain Front Poultry House.

An inquirer asks for information about curtain front houses for poultry in this climate.

The curtain front house or the drop curtain to be used all the time or only during stormy weather is quite popular in the East and can be used here equally well. There is so little rainfall and no snow storms here so that the curtain would in all likelihood not be used half a dozen times in this climate, but in places where there is considerable rain and the rain would drift in on the hens it is an excellent plan to have a curtain to let down. A wet hen is a sorry thing and a wetting in the night will check egg laying always and often will endanger the hen's life and bring on an attack of pneumonia. So although we advocate the open front houses in this climate, if the house is small and if it is open on the rainy side, by all means take some method for keeping the hens dry. Plenty of air but no draughts, plenty of air but no rain on the fowls at night, this is the way to insure both vigor and eggs.—Mrs. A. B.

Turkey Wings Droop.

What causes the wings of young turkeys to droop? They are about

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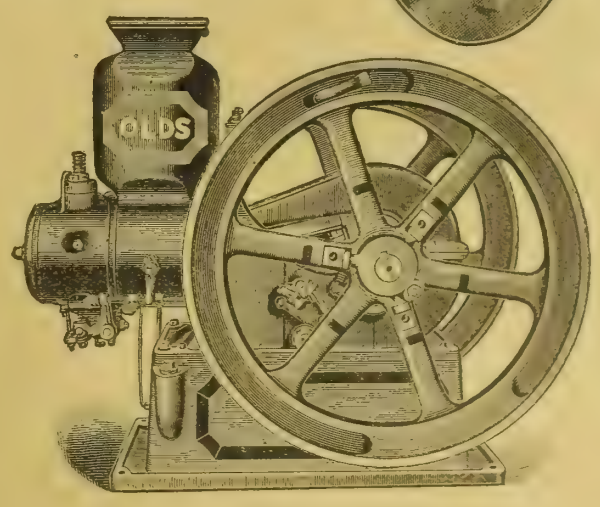

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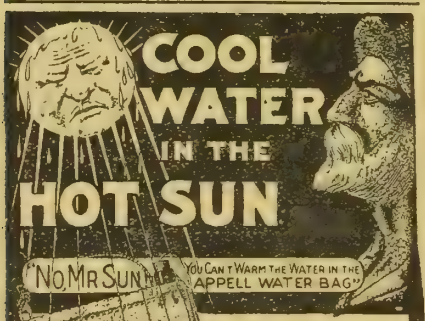

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While in Nevada recently I had occasion to drink out of one of your South African Water Bags. Water from the bag certainly tastes good on the desert. We used one of your 2½ gallon bags and *the water remained cool all day, even though the temperature was over 100 in the shade*, and in the morning I found the water sparkling and as cold as ice water. It certainly is a boon to those living in the arid regions.

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three weeks old and their wings have been drooping over a week. Otherwise they seem all right as they eat well. Can you give remedy?—Subscriber, W. E. H.

The wings of some little turkeys seem to grow quicker than the rest of their bodies and it is well if you notice them inclined to droop to cut the feathers back as far as you can without making them bleed. Some people pull the feathers out but I have never found the need of that. Feed them milk and follow the rules given in the Cultivator for the care of turkeys and you will have no trouble. If turkeys are housed too closely at night the wings will droop and the turkeys become weak.—Mrs. A. B.

Geese.

Do geese breed in water? Is it of any benefit to have water for them to swim in? What is the best variety to raise for the San Francisco market? Where can I get some reading matter about the housing and feeding of geese in California?—H. A. H.

Geese breed in water, but they breed equally well without water to swim in. While it is not necessary to have water for them to swim in, they enjoy it very much and I have no doubt but they really do better, are happier and require less care when they can have a pool or pond or even a good sized tub to wash in. The best variety is the Toulouse for the market. You can get an excellent book published by the Reliable Poultry Company called "Ducks and Geese" at any of the supply houses advertising in this paper. In that book you will find everything you need about feeding, raising and marketing geese.—Mrs. A. B.

Crop-bound.

A few days ago I noticed a Black Minorca hen moping around the yard; her comb was blue and upon examination found her crop full and hard. Placed her in a coop alone and for four days there was no change whatever, though she had no food. Can you give cause and any remedy that could have saved her?—Subscriber, Campbell.

Your Minorca hen was "crop-bound." It is caused by a stoppage in the crop. The food stays there until it putrifies, then the hen dies from blood-poisoning. The remedy is to induce the food to leave the crop either up or down, by giving a dose of castor oil and gently kneading the crop, or by giving half a teaspoonful of bi-carbonate of soda in half a cup of warm water and kneading the crop whilst you hold the hen by the feet with the head hanging down, when she will vomit and often the obstruction and the food will come up. Otherwise the only cure is "with a sharp knife cut through the skin lengthwise of the bird an opening one inch long. Cut only the skin, leaving the crop untouched until the blood of the first incision has ceased to flow, then cut through the crop a little over a half inch long. With a button-hook or anything handy remove the contents. If filled with grass or hay it may be sometimes necessary to cut the mass with scissors before any start can be made. When the crop appears empty put your finger into it and feel if there is any obstruction at the outlet. Wash the crop out. I do this with a syringe. When the outlet is clear the last thing is to sew up the cut. With a needle and white silk thread take two stitches in the cut in the crop, then in the same way take three stitches in the outer skin, tying off the silk at each stitch. Be careful not to include the crop in the knot tied. After the operation feed soft food, omitting grain for a week.—Mrs. A. B.

Freak Eggs.

Please tell me why the almost developed eggs in a hen otherwise healthy are triangular in shape and almost black in color. I have killed several in that condition showing no outward symptoms.—A. P. Z., Coachella.

From your description I should diagnose the case as inflammation or gangrene of the ovaries, but as you do not say in what part of the hen you found the discolored and triangular eggs, I cannot be quite sure. Dr. Salmon says, "It is quite common with all varieties of poultry. The cause of this trouble is not well understood. It has been attributed to birds being too fat." I think it usually comes from insufficient exercise and a too heating diet. The trouble is not discovered until after death, and therefore we cannot prescribe a treatment.—Mrs. A. B.

Feeding Fruit, Etc., to Fowls.

Are ripe tomatoes, melons and green cucumbers good to feed laying hens and chickens? What is the value of a gallon of skim milk for chickens where grain is about two cents per pound?—J. B., Long Beach.

Ripe tomatoes, melons and cucumbers are all good for chickens, fed with moderation and regularly if the vegetables are not mouldy. Some people think that the acid of the tomatoes will stop hens laying, but I have fed them liberally and never found that the case. However, as the tomatoes become plentiful just at moulting time, I think that when hens moult at the time that they are having tomatoes to eat that they may stop laying (as they always do when moulting) and that the tomatoes had nothing to do with it. Melons I have fed plentifully with good results, although the melons some times affect the kidneys of my hens. The analysis of milk shows that in protein value one pound of rolled barley is equivalent to about four pounds of skim milk. There is, however, the casein in the milk and there is something in skim milk that is especialy beneficial to young animals of all kinds. I would suggest that you give half of the chickens the milk and the others no milk until you have proved to your own satisfaction the great value of milk, as personally I have done.—Mrs. A. B.

Tapping Telephone Line.

There is a telephone line running across my place. Does this give me a right to connect with it and use telephone line of my own? If so, how may I connect?—Subscriber, Brice.

You would have no right to attach your wires to a telephone line running across your place. If the line was erected without securing your permission or permission of preceding owner, then it may be considered a trespass, and we doubt not you could prevent any company from running a line over your land, but to attach without securing permission would lead to trouble. Where an attachment is to be made the best way would be to make purchases of the necessary supplies and secure information from the electric man.

Mulberries for Birds.

Have been told to plant mulberry trees through orchards to keep birds from other trees when the mulberries are in bearing.—Subscriber, Covina.

We know this is a general belief, and certainly the birds eat great quantities of mulberries. One serious objection, however, is the amount of room taken by the mulberry trees. They are strong growers and, while not as great soil robbers as some trees, we believe we prefer to chance a regular producing tree with control of the birds in some other way. We will be pleased to hear from our subscribers who have had experience.

MISCELLANEOUS

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10,000 feet	2½-inch	Standard, at	14c per foot
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To mortals crushed by sorrow and by error.
And though thy feet through shadowy paths may grope,
Thou shalt not walk in loneliness or terror.

Give of thy gold, though small thy portion be,
Gold rests and shrivels in the hands that keep it.
It grows in one that opens wide and free,
Who sows his harvest is the one who reaps it.

Give of thy love, nor wait to know the worth
Of what thou lovest; and ask no returning.
And wheresoe'er thy pathway leads on earth,
There thou shalt find the lamp of love-light burning.

—Ella Wheeler Wilcox.

HONOR REGAINED.

It was during the last great insurrection in Tonkin. I was at that time a captain in the 93rd regiment of infantry stationed at a small town in the interior. Cholera was raging in our camp and many privates and officers died from it.

Everything seemed to depress our spirits. Never did I hear a single complaint, though many of them had to do hard hospital service week after week. When I had time, I often went to the hospital and helped where I could.

One night I had been working in the hospital since ten in the morning and felt terribly exhausted, when our major surgeon came to me and said: "Look here, Mouvielle, this will never do. You will immediately go home and to bed. You look as if you were just ready to drop."

"It is just about the way I feel," I replied, "and for once I shall take your advice."

I said good-night to the surgeon and when I got home I threw myself on my bed. The next thing I remember was my orderly shaking me to wake me up. I asked him if I was needed at the hospital.

"Yes, captain! It is sergeant Duval, the last cholera patient who wants to speak to you."

"Thank you, Jacques, I will be with him in a moment."

I must have slept for some hours, for it was three o'clock now. The moon was shining into the room and for a moment I stood looking into the peaceful night landscape, but my thoughts wandered to the little hospital and to the man who had sent for me.

Poor Duval! He was a splendid soldier, who had performed wonders during the time of the insurrection and once saved my life at the risk of his own, a deed for which he had been mentioned in the reports and been rewarded with the cross of the Legion of Honor.

I was thinking of this while walking towards the hospital. The surgeon met me at the door and told me that Duval was lying in a little room by himself.

"Go right in to him, Mouvielle," he said, "he asks for you all the time, and I am afraid he will not last very much longer."

I found Duval terribly changed. There was not the slightest doubt that he was dying. He seemed to be asleep, but he heard my steps and suddenly opened his eyes and sat up in bed. Looking at me with a wistful expression he whispered hoarsely: "God bless you, captain, for coming to see me." Then he stopped short and I could see he was in great pain.

"Do you suffer much?" I asked him.

"It is not the pain that hurts me," he said slowly, "but I feel the end coming, and I have something I must tell you."

"I must remind you of the time when I entered the regiment. I had traveled all day from Paris to Marseilles and was almost crushed by a great sorrow. The new conditions of military life did not improve matters and in the evening I sneaked outside the walls. I thought I was alone and knelt down to pray, sobbing like a child. My sobs were heard by a young officer who passed and he came up to me and asked why I was so sad. I told him I had lost a dear friend; and he did all he could to console me. The next day I found out his name, it was you.

"And now I want to thank you for everything you have done for me since that dreadful evening, but there is one thing I must tell you. I said I had lost a dear friend. It was true, captain, but I had also lost my honor, and when you found me, I had prayed to God he would forgive my past and let me win back my honor under a new name. From that day I wore the name Duval, but my real name is Raoul de Brissac."

After a long pause he continued.

"My parents belong to an old noble family in Touraine where I was born. My mother died immediately after my birth. I was brought up by my father until I went to Paris to study law. For a while I worked hard but then I began to gamble and spent, nearly all my time in my club. One night I won 50,000 francs at Baccarat. Then luck changed and when I had lost it all and 7500 francs besides, my friends begged me to stop, I refused and borrowed 1000 francs from a sportsman present. I lost them and left the club. When I finally came home it was seven o'clock. I had three hours to get the money I had lost and borrowed.

"I knew my father had an account at the same bank as I. I forged his name to a check, and had my housekeeper cash it.

"The next day I had a violent attack of brain fever and did not come to for many days.

"Has my father been here, I asked my housekeeper.

"'Yes,' she said, 'I telegraphed for him. He has been with you for a week. Today the doctors said the danger was past and he went home.'

"I understood. In my delirium I had told him everything. As soon as the doctor told me I might go out my resolution was made. I intended to go home and ask my father's forgiveness and then enlist for Tonkin.

"I reached our old home, hurried through the park and looked through the library windows. I saw my father sitting inside, his face buried in his hands.

"I rushed to his side and begged him to forgive me. He took me into his arms and said: My poor boy—my own

poor boy!" I told him I wanted to go away and begin life over again and his voice was broken when he said:

"'My forgiveness you have. But you are right, you must begin life over again, you must win back your honor.'

"He put some bills into my pocket. I saw he had grown old. He asked me what I intended to do and gave me his blessing before I left. The same night I enlisted and the rest you know, captain."

There was a long pause. Then I asked him what I could do for him.

"My father is still alive, captain, and I would like you to go to see him when you go back to France. Will you then give him my cross and my sword and tell him that Sergeant Duval won back Raoul de Brissac's honor. Will you do that, captain?"

I took the dying man into my arms and promised him to carry out his last wish.

I did not return to France for two years, but soon as I landed I went to Touraine and found sergeant Duval's father. He was very weak and had to be carried into the old library. He looked at me in silence for a few moments and then asked me if I had a message for him.

I told him all I knew about his son and handed him the sword and the cross. The old man's sorrow was almost more than I could bear. His heart was broken.

At last I left him and while I walked to the railroad station I thought of the man who had saved my life and thanked God that I had been permitted to carry out the dying wish of him, who had certainly won back his honor. —Journal of Agriculture.

PEROXIDE OF HYDROGEN.

Peroxide of hydrogen is not a medicine or drug, any more than is air and water. Pure water is hydrogen two parts and one part oxygen, while peroxide of hydrogen contains two parts of hydrogen and two parts of oxygen; hence it is the same as pure water, except that it contains one-fifth more oxygen than does pure water. It is oxygenized water. It is the greatest purifier known, a most energetic disinfectant, doing its work better than the dangerous chemicals usually employed—mercury bichloride, carbolic acid, etc. There is positively no danger in it; it can be swallowed without harm, and is safe to keep where there are children. It cleanses and purifies infected wounds, putrid cavities, abscesses, and all diseased surfaces, oxygenizing the poisonous matter and rendering the parts sterile. Cuts, wounds, scratches, burns, and all injuries should be treated with it, as it destroys contagion. Into foul pus cavities it should be injected with a small syringe, continuing the treatment as long as it continues to bubble. Bites of animals, reptiles, insects, should be treated with it at once. Doing no injury to healthy tissue, it attacks pus with considerable energy and bubbling, killing it. Foul odors give way to it. One ounce in a gallon of water is a good disinfectant and deodorizer, and this is excellent to use after a bath, or where perspiration is unpleasant. Used as a mouth wash, it cleanses and purifies, and keeps the teeth white and clean, penetrating every cavity. A teaspoonful to a half pint of water is a good throat gargle, and for catarrh and hay fever. It removes tan and sunburn, whitens the hands, and removes many forms of parasitic growth which cause pimples, etc. It bleaches the hair, and clothing, and should not come in contact with either, as it in time kills the hair. It is not a patented preparation, but is sold by druggists everywhere, just as distilled water is, in bulk, and the price is low.

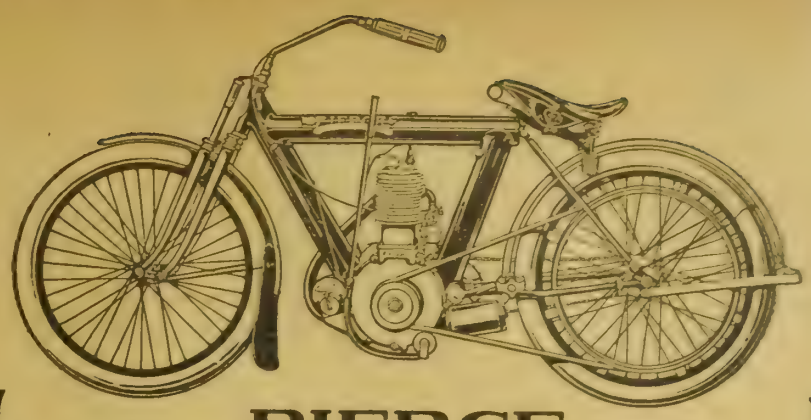
CUCUMBER PICKLES.

Cover the bottom of cask with common salt; gather the cucumbers every other day, early in the morning or late in the evening, as it does not injure the vines so much then as in the heat of the day. Cut the cucumbers with short pieces of the stem on, carefully laying them in a basket or pail so as not to bruise. Pour cold water over and rinse, being careful not to rub off the little black briers, or in any way to bruise them, as that is the secret of keeping them perfectly sound and good for any length of time. Lay them in a cask three or four inches deep, cover with salt and repeat the operation until all are in. Pour in some water with the first layer—after this the salt will make sufficient brine. Spread a cloth over them, then a board with a stone on it. When a new supply of cucumbers is to be added, remove stone, board and cloth, wash them very clean, and wipe every particle of scum from the top of the pickles and sides of the cask. Throw away any soft ones as they will spoil the rest. Now put in the fresh cucumbers layer by layer, with salt to cover each layer. When cask is nearly full, cover with salt, tuck cloth closely around the edges, placing the board and weight on top. Cover the cask closely and the pickles will be perfect for two or three years. Cucumbers must always be put in the salt as soon as picked from the vines, for if they lie a day or two they will not keep. Do not be alarmed at the heavy scum that rises on them, but be careful to wash all off the board and cloth.

When wanted for pickling, remove from brine, taking off weight and board, carefully lifting cloth with scum on it. Wash all clean and wipe all scum off cucumbers and sides of cask. If not all are removed from the brine at once, return the cloth, board and weight and cover closely. Place the cucumbers in a vessel large enough to hold two or three times as much water as there are pickles, cover with cold water (some use hot), change the water each day for three days, place porcelain kettle on fire, fill half full of vinegar (if vinegar is very strong add half water) fill nearly full of cucumbers, the larger first, then the smaller ones, put in a lump of alum the size of a nutmeg, let come to a boil, stirring with a wire or wooden spoon so as not to cut the cucumbers; after boiling one minute, take out, place in a stone jar, and continue until all are scalded, then pour over them cold vinegar. In two or three days, if the pickles are too salt, turn off the vinegar and put on fresh, add a pint of brown sugar to each two gallons pickles, a pod or two of red pepper, a very few cloves, and some pieces of horseradish. The horseradish prevents a white scum from rising. The best vinegar is made from pure apple cider.

Small Cucumber Pickles.

For this none of the gherkins should be more than three inches in length. Lay them in alternate layers with salt in a large crock and pour in enough cold water to cover all, weighting the gherkins down with a large plate, on which is laid a stone. The pickles should be kept in the brine for ten days and stirred from the bottom every other day. At the end of the appointed time pour off the brine and pick over the gherkins. Throw away those that are decayed and soak the others in fresh water for two days. Your next step is to green the pickles by lining your kettle with grape leaves, arranging on this the cucumbers in layers, sprinkling a pinch of powdered alum over each layer. One teaspoonful is enough for a large kettle. Cover the pickles with cold water. Lay three thicknesses of grape leaves over them, cover closely and cook slowly for six hours. Take out the pickles and throw into very cold water. Make a pickle vinegar of four quarts of vinegar, a cupful of sugar, three dozen each of whole black peppers and whole cloves, 12 blades of mace, 18 whole allspice and boil together for five minutes. Drain the gherkins from the water, pack them into jars and pour the scalding vinegar upon them. Keep in a dark closet and do not use for at least two months.



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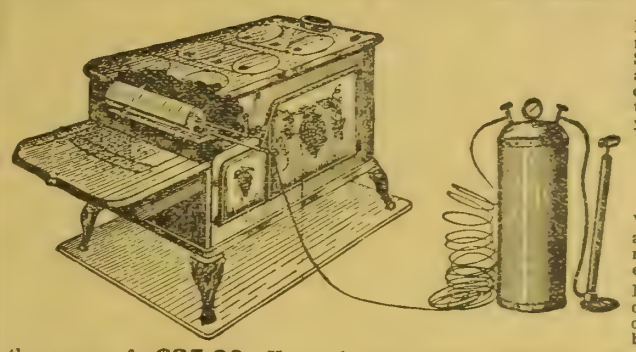

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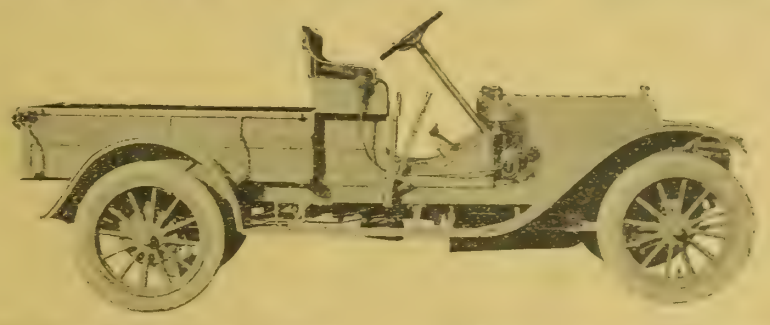

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San Francisco-Los Angeles Produce Markets

Los Angeles Market

LOS ANGELES, Aug 23, 1911.

Butter.

Extras have lost a point during the week. All other grades same, with firm conditions.

Prices to trade 2½c in advance of the following Produce Exchange quotations:

Extras	25½
Firsts	25
Ladies	23
Country	20

Cheese.

Local Anchor	16
Oregon Daisy	16@16½
Northern Fresh	16
Domestic Swiss	18
Imported Swiss	30@32

Eggs and Poultry.

A firm market obtains with eggs and an advance of a cent is noted on all save Easterns.

Paying prices f. o. b. Los Angeles are:

Local ranch, candled	35
Case count buying price	31
Northern and Imperial	29@33
Eastern	25@26
Pullets	26

Dealers pay for live poultry f. o. b.:

Hens, per lb	15
Roosters	6
Broilers	14
Fryers	12
Roasters	14
Turkeys	23@27
Ducks	12
Geese	10
Guinea hens, doz	4.00
Squabs, doz	1.75

Live Stock.

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs	7¼
Prime steers	6
Heifers	6
Calves, per lb	6½
Sheep, ewes, per head	4.75
Lambs, per head	3.75@4.25
Wethers	5.00@5.50

Potatoes.

Wholesale prices are:

Sweets, yellow, lb	3¾@4
New potatoes, lugs	65@90
Burbanks, lug	1.60@1.90
Highlands, ctl	1.65@1.75

Onions.

Wholesale quotations:

Australian Red, ctl	1.75
Silverskins, box	40@50
Yellow Danvers, ctl	1.25@1.50
Garlic	5@6

Vegetables.

Wholesale quotations:

Artichokes, northern, doz	75@1.00
Beets, doz bunches	20@25
Bell peppers, lb	5@7
Beans, wax	3@4
Green chilis	4@6
Chilis, dried	15@20
Cucumbers, lugs	35
Cabbage, sack	95@1.00
Cabbage, red, lb	3
Cauliflower, doz	1.50
Celery, new, crate	2.50@2.75
Carrots, sack	1.00@1.15
Corn, lug	40@60
Egg plant	3@5
Horseradish lb	12½
Onions, green, doz bunches	20@25
Kohl-rabi, doz bunches	40
Leeks, doz	45@50
Lettuce, crate	1.00@1.25
Mushrooms, basket	3.50@4.00
Oyster plant, lb	5@6
Okra	5@6
Peas, lb	4@5
Parsley, doz bunches	25@30
Parsnips, doz bunches	45
Radishes, doz bunches	15@20
Rhubarb	1.25@1.50
Spinach, doz	20@25
Squash, summer	25@30
Spearmint, doz	25@30
Tomatoes, lug	30@50
Turnips, sack	1.00@1.25
Watercress, doz	25@40

Citrus Fruits.

Valencias	2.75@3.50
Grapefruit	1.75@3.00
Lemons	2.00@3.75
Limes, hundred	1.25

Fresh Fruits.

Wholesale prices on the market are:

Apricots, crate	1.25@1.50
Apples, W. Astrachan	1.25
Apples, Gravenstein	2.00@2.50
Apples, Alexanders	1.75@2.00
Apples, Crab, lug	1.60
Bananas	3½@4
Cantaloupes, small	50@60
Cantaloupes, large	1.10@1.25
Currants	8@10
Figs, box	75@1.25
Grapes, Thompson Seedless, lb	3
Grapes, Black, crate	1.50
Grapes, Malagas, lug	1.35
Loquats, lb	4@6
Loganberries	6@7
Nectarines, lug	95@1.00
Peaches, lug	50@85
Pineapples	7@8
Plums, Clymans, lug	1.50
Plums, Satsuma	90@1.00
Plums, Tragedy	1.50
Plums, Burbank	75@85
Plums, Green Gage	1.75
Prunes, Simoni	1.50
Pears, Bartlett, lb	6@7
Dewberries	4@5
Blackberries	6@7
Raspberries	7@9
Strawberries	4@6
Watermelons, lb	¾@1

Dried Fruits.

Wholesale prices to retailers are:

Evaporated Apples, fancy, lb	15
Apricots	16@17
Figs, box	1.65@2.00
Peaches	12½@13
Nectarines	12
Pears	12@13
Prunes	10@16
Plums	10

Beans Dried.

Wholesale quotations:

Limas	6.75
Black eyes	8.00
Pinks	5.75
Lady Washington	4.25
Small white	4.00@4.10
Garvanzas	4.50
Bayous	4.00@5.00
Lentils	6.00@7.00
Mexican Reds	4.75@5.00

Nuts.

Wholesale quotations:

No. 1 soft shell walnuts	18
Almonds, IXL, lb	19@20
Pecans, polished	15@17
Peanuts, Eastern	8
Peanuts, California	6
Pine Nuts	18

Honey.

Wholesale quotations:

Extracted water white	8
Extracted light amber	7
Comb water white	16@17
Light amber	13@14
Beeswax	30

Hay.

Buying prices f. o. b. cars Los Angeles are:

Barley hay	11.00@13.00
Wheat hay	11.50@12.50
Tame oat	14.00@15.00
Alfalfa	12.50

Grain.

Wholesale selling price f. o. b. Los Angeles:

Wheat, new, cental	1.65@1.70
Corn	1.70@1.85
Kaffir	2.10
Millet	3.75
Popcorn	4.75@5.00
Egyptian corn	1.65
Red oats	1.80
Seed barley	1.50

Feed Stuff

Wholesale selling price f. o. b. Los Angeles:

Alfalfa meal	1.15
Beef scrap	3.10
Cracked corn	1.90
Cracked wheat	1.85
Shorts	1.95
Bran	1.70
Oil cake meal	2.50
Feed meal	1.95
Rolled Barley	1.70
Middlings	1.85

San Francisco Market

SAN FRANCISCO, Aug. 22, 1911.

Butter.

Butter market is steady with a slight advance in Prime Firsts and Firsts. Other grades same as last week.

Prices to trade 2½c in advance of the following Produce Exchange quotations:

California extras, lb	26
Prime firsts	25
Firsts	24½
Seconds	22

Cheese.

Cal. flats	11@14½
Cal. Y. America, fy, new	13½@16
Oregon, fancy	13½

Eggs and Poultry.

Eggs dropped two points on Thursday of last week, where they remained. Market in fair condition.

Official quotations of the San Francisco Wholesale Dairy and Produce Exchange are:

Fresh ranch extras	31
Prime firsts	30
Firsts	27
Seconds	19½
Eastern seconds	16
Select pullets	24½

Hens, doz	4.00@9.00
Fryers, doz	4.50@5.50
Ducks	4.50@7.00
Broilers	2.50@4.00
Roosters, doz	4.00@9.00
Geese	2.00
Goslings, pr	2.00@2.25
Pigeons	1.75@2.25
Squabs	2.00@2.50

Live Stock.

San Francisco prices, gross weight:

Steers	4@5½
Cows and heifers	3@4½
Calves, lb	5@6¾
Hogs	5@7½
Wethers, No. 1	4@4¼
Milk lambs	5@5¼
Ewes, No. 1	3½@3¾

Potatoes.

Wholesale market quotations:

River whites, ctl	1.25@1.50
Sweets, lb	2½@3

Onions.

Red, new, sack	75@90
Silverskins	80@1.00
Yellow, new	85@1.00
Garlic, lb, new	3@4

Vegetables.

Wholesale quotations:

Asparagus, box	1.00@1.75
Beans, string	1@1½
Beans, wax	1@1½
Limas	2@2½
Bell peppers, box	75@1.00
Carrots	60@75
Cucumbers, box	30@40
Corn, sack	75@1.00
Chili peppers, box	35@50
Celery, crate	1.50@2.50
Egg plant, box	40@50
Cauliflower, doz	50@60
Lettuce, crate	75@2.00
Okra, box	50@75
Peas, sack	1.50@1.85
Hubbard squash, sack	1.00
Summer squash, lug	25@35
Tomatoes, lug	75@1.35
Turnips	60@75

Citrus Fruits.

Valencias	3.25@4.00
Grapefruit	1.50@2.75
Lemons	1.50@4.00
Limes, Mexican	6.50@7.00

Fresh Fruits.

Apricots, crate	75@1.00
Apples, Gravensteins	75@1.70
Cantaloupes, ponies	60@80
Cantaloupes, standard	75@1.25
Cantaloupes, Rivers	1.00@1.25
Nutmegs, large, box	25@35
Figs, layer	50@65
Grapes, blk	50@75
Grapes, Thompson Seed., crate	50@75
Grapes, blk	50@60
Grapes, Muscat, box	75@1.00
Peaches, box	35@75
Peaches, Early Crawford	40@65
Pears, box	75@1.25
Plums, Tragedy, box	50@75
Prunes, German, box	60@85
Loganberries, chest	4.00@6.00
Blackberries, chest	3.00@4.00
Raspberries, chest	7.00@12.00
Strawberries	4.00@6.00
Pineapples, Hawaiian	2.00@3.50
Bananas	1.00@1.50
Watermelons, doz	1.50@2.50

Dried Fruits.

FRUITS—1911 crop, f. o. b., carload lots, per lb.—Apples, 11@12¼c; Apricots, 15¼@18c; Peaches, 10½@11¾c; Prunes, bulk basis, 5½@7c; per lb., 4¾@9½c, with a premium of ½@1c on large sizes; Figs, 5@6c for White; Pears, 11@14¼c.

RAISINS—1911 crop: Seeded, per pkg. —Fancy, No. 16, 7¾@8c; Choice, No. 16, 7½@7¾c; Loose Muscatels, in 50-lb. boxes—Standard, 4-crown, 6½@7c; do, 3-crown, 6@6½c; do, 2-crown, 5½@5¾c; Seedless—Muscatel, 5¼@5½c; Sultanas, 6½@6¾c; Thompsons, 7@7¾c.

Nuts.

Walnuts, No. 1 soft shell	16@16½
Walnuts, No. 1 hard shell	14½
Almonds, '10, N P U	16@16½
Almonds, '10, Nonp	18@18¾
Almonds, '10, I X L	16½@17¼
Pecans	14@17
Chestnuts, California	6@8
Peanuts	5@5½

Beans Dried.

Limas	5.75@6.00
Pink	4.80@5.00
Black eyes	6.00@6.35
Small white	3.60@3.75
Large white	3.40@3.60
Kidneys	5.50@5.75
Garbanzos	3.00@3.25
Bayou	3.85@4.10
Horse beans	1.50@2.00
Red Mexicans	5.25@5.40
Cranberry	3.75@4.00

Hops

Hops, coast, 1910	30@34
Hops, 1911 contracts	40@45
Hops, Oregon, 1911	40@45

Honey.

Water white, comb, '11	15
Dark comb	12½
Extracted white, '11	9@10
Extracted dark	6½
Beeswax, lb	24@30

Hay.

Scott, Magner & Miller say:

Receipts of hay for the week have been 4500 tons. Our arrivals of large consignments by water during the last two weeks have swelled the receipts considerably. Hay coming by cars has not been heavy; in fact, with the exception of Monday, arrivals have been comparatively light.

Market conditions during the week have been a little better than heretofore for the better grades of hay, and there is apparently a stronger undertone which has created a better condition generally.

The poorer grades of hay are very much neglected, and offers of such type do not meet with satisfactory sale as consumers generally have been looking for the better classes and many of them will not take the poor varieties, even at comparatively very low figures.

We have been making sales recently of high type retailing hay on a higher basis than heretofore as this variety of hay has been particularly sought for, and very little has been marketed out of this year's crop.

While our markets during the past week on oats and barley have not been definitely higher than last week, yet the rapid advance to the prevailing high figures which took place last week are now well established and a great deal of trading has been done on the present high basis of prices for both oats and barley. These high figures for feed grains have naturally caused a strengthening tendency.

Alfalfa hay has been arriving more freely and there has been a little more trading recently on this article. Large lots are offering in various sections, but no large purchases are being made.

We quote the wholesale prices in round lots on today's market as follows, viz:

Fancy wheat hay	16.00@16.50
No. 1 wheat or wheat & oat	13.50@15.00
No. 2 wheat or wheat & oat	11.00@12.00
Choice tame oat	13.50@14.00
Other tame oat	10.00@12.00
Wild oat	9.00@11.00
Stock hay	5.50@6.00
Alfalfa	9.00@11.00
Straw, bale	50@57½

Grain.

Wheat	1.42½@1.47½
Barley, fancy	1.60
Barley, good to choice	1.55@1.57½
Barley, poor to fair	1.47½@1.52½
Corn	1.60@1.62
Oats, red	1.50@1.65
Rye	1.50@1.60
Mustard, brown	5½
Alfalfa seed	18
Millet	3@3½
Flaxseed	5@5½
Broom corn seed, ton	25.00@30.00

Feed Stuff

Alfalfa meal	15.00
Bran, ton	28.00@30.00
Feed cornmeal, ton	38.00@39.00
Cracked corn	38.00@39.00
Rolled barley, ton	32.00@33.50
Rolled oats, ton	31.00@32.00
Middlings	32.50@35.00
Oil cake meal	42.00@43.50
Cocoanut cake, ton	24.00@25.00
Mixed feed, ton	25.00@27.00
Shorts	29.00@30.00

Deciduous Fruit Market

SACRAMENTO, Aug. 19, 1911.

Manager F. B. McKevitt of the California Fruit Distributors reports:

The following gives the number of cars of deciduous fruit shipped from all points in California for the week (7 days) ending Friday morning, August 18th, 1911:

Peaches—265¾ cars. As indicated last week, the shipment of this fruit has fallen off quite materially, over 100 cars less going forward than during the previous seven days. Some of the desirable varieties of Clings from Placer County are now offering, McDevitts in considerable quantities and a few Orange Clings. Late Crawfords are nearly finished. There will be very few peaches to offer until Salways are available, which will be about September 1st.

Plums—116½ cars. Plum shipments continue to decrease slowly. Giants, Grand Dukes, Gross and Diamonds, with a few Kelseys, constitute the bulk of the movement. Shipments will probably drop off rapidly after next week.

Pears—301¾ cars. A decline of over 50 cars in this variety is noted from shipments of last week. A further decline during the coming week is probable. Pear shipments on the river are practically completed. Fruit has improved in quality and later shipments will be better than those previously sent out. Some Buerre Mardys are now offering.

Grapes—197½ cars. An increase in the shipment of this variety over last week amounting to practically 50 cars is noted. A further increase is expected next week. Movement of Thompson Seedless is practically concluded, varieties now mostly in evidence being Malagas and Black Prince, with limited offerings of Muscats and Tokays. The quality of grapes this year is unusually good. After next week considerable quantities of Tokays will be available.

Weather conditions are very favorable.

Comparative Statement of Shipments.

	1910.	1911.
Cherries	250½	216¾
Apricots	289¾	214½
Peaches	1623¾	1299½
Plums	1487¾	1016¼
Pears	1806¾	1200¼
Grapes	500¼	338
Apples	104¼	1
	6063	4275

Citrus Fruit Market

LOS ANGELES, August 23, 1911.

With shipments of oranges ranging from 15 to 20 cars daily the market has been cleaned up and a firm condition obtains at this time. The stock in hand is first class and at the present rate of picking the season will end with practically all fruit shipped. By the first of September there will probably not be over 1200 cars in California. This will be an average of 20 cars daily.

Cream Separators, all sizes and prices. Guy F. Kelsey & Co., 106 East Eighth St., Los Angeles, Cal.

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Petaluma Cal

Lemons have a firmer tone, though there are are approximately 39,000 boxes of foreigns on the pier in New York. The number afloat, however, is only about 7500. This number of foreigns rather tends to lower the possibilities of low grade fruit, but as they are old the demand is anything but keen.

Shipments.

Shipments of oranges to date since November 1st, 1910, 35,316 cars, lemons 6038 cars, total 41,354. To same date last season: Oranges 24,251 cars, lemons 4278, total 28,529.

NEW YORK, Aug. 21.—Seventeen cars Valencias, two cars lemons sold. Market strong on Valencias, prices slightly higher. Market also higher on lemons. Weather fair.

VALENCIAS—	Avge.
Corona, National G. Co	$3.90
Corona Stds, National O Co	3.30
Duquesne, Duquesne Ft Co	4.45
Fort Pitt, Duquesne Ft Co	3.45
San Pasqual, H W Bailey	2.45
Duquesne, Duquesne Ft Co	3.90
Fort Pitt, Duquesne Ft. Co	3.00
Violet, D M Ex	3.50
Jasmine, D M Ex	2.65
Glendora Hghts, fy, Chapman	3.35
Evolution, A C G Ex	2.65
Whittier, S T Ex	4.10
Nonpareil, Covina Ex	3.00
Red Shield, A C G Ex	3.70
El Azar, A C G Ex	3.10
Alhambra, S T, Alhambra	3.05
Don Quixote, Alhambra	2.90
Rossmoyne, S T Ex	2.35
Girl, S T, Rossmoyne	1.95
Nonpareil, Covina Ex	3.20
Bear, O K Ex	2.80
Quail, O K Ex	1.85
Coyote, O K Ex	2.25
Coyote Special, O K Ex	1.70
Pico, S T, Whittier	3.50
Red C, Covina Ex	3.10
Cougar, Covina Ex	2.85
United	3.30
Dulce, sd, Randolph Ft	2.65
Titus Ranch, fy, San Marino	3.10
El Toreador, sd, San Marino	2.35
Rooster, S S Ex	3.85
Searchlight, S S Ex	3.00
GRAPEFRUIT—	
Primrose	$ .90
Rossmoyne	.45
Girl	.40
LEMONS—	
Loman	$3.60
Buck	1.50
Lemongrove	1.05

ST. LOUIS, Aug. 21.—Favorable. Five cars sold. Market strong on Valencias. Weak on lemons on account of condition.

VALENCIAS—	Avge.
Purity, S. S. Ex., Tustin	$2.90
Evergreen, S. S. Ex., Tustin	2.25
Nonpariel, Covina Ex.	3.10
LEMONS—	
Mission Bells, ch, Randolph Ft	$2.65
El Toro, sd	2.55
Lemongrove	2.70
Sardonyx, ch	3.05
Alpine	2.65

PITTSBURGH, Aug. 21.—Five cars sold. Market advancing on both oranges and lemons. Cool and clear.

VALENCIAS—	Avge.
Parrot, S. A. Ex	$3.15
Carlo, S. A. Ex	2.15
Violet, D. M. Duarte	4.10
Searchlight, S. S. Orange	2.65
Naralimo, or, Sparr Ft. Co	4.00
Hawk, S. A. Ex	3.00
Iris, D. M. Duarte	4.40
Jasmine, D. M. Duarte	3.60
Sunset, S. S. Orange	2.55
Circus, xc, Sparr Ft. Co	3.50
LEMONS—	
Corona Beauty, Q. C. Corona	$2.50
Hawk, S. A. Ex	2.65
Grove, Q. C. Corona	2.05
Goddess, S. A. Ex	2.55

Do your cows milk hard? Send 50 cents for teat expander. O. J. Weber Co., 225-227-229-231 East Sixth St., Los Angeles, Cal.

BOSTON, Aug. 21.—Two cars sold. Favorable. Market steady.

VALENCIAS—	Avge.
Pointer, A. C. G., Latin Station	$3.40
Glendora Heights, xc, A. C. G. Ex	3.15
Stag, A. C. G., Azusa	4.10
Rey, S. T., Fernando	3.90
Urchin, S. T., Fernando	2.60
Robusta K, A. H. Pach	3.35
Hobo K, A. H. Pach	2.50
Girl, S. T. Rosmoyne	1.90
Arch, ch, Hawarden C. A	2.90
Glendora Heights, xf, A. C. G	3.80
Evolution, A. C. G., Glen	2.60
Pointer, A. C. G., Azusa	3.15
Tunnel, S. T. Fernando	3.05
Robusta, A. H. Pach	2.95
Hobo, A. H. Pach	2.75
Rosmoyne, S. T. Rossmoyne	2.60
Hawarden, Hawarden C. A	2.60
H.C.A., Hawarden C. A	2.55
LEMONS—	
Mission, S. T. Santa Barbara	$2.95
Rey, S. T. Fernando	4.50
Excelsior, ch, Earl Ft. Co	2.15
Mission Bells, Randolph Ft. Co	1.50
Festival, S. T. Santa Barbara	1.90
Marguerite, xc, Earl Ft. Co	3.10
Sunrise, sd, Earl Ft. Co	2.30
GRAPEFRUIT—	
Rossmoyne	$1.00
Girl	.50

CLEVELAND, Aug. 21.—Two cars Valencias and one car lemons sold. Market lower on Valencias, unchanged on lemons. Cool, clear.

VALENCIAS—	Avge.
Red C, Covina Ex	$3.50
Don Quixote, S. T., E. Alhambra	2.90
Cougar, Covina Ex.	3.05
LEMONS—	
Trail, S. T. Lamanda P. A. G. C. Ex.	$3.05

PHILADELPHIA, Aug. 21.—Four cars Valencias and two cars lemons sold.

VALENCIAS—	Avge.
Martha Washington, S. S. Tustin	$3.05
Stag, A. C. G., Glendora	4.85
Hunter, A. C. G., Glendora	2.20
Campfire, S. T., Nordhoff	3.35
Nonpariel, Covina Ex.	2.70
Pointer, A. C. G. Ex	2.70
Quality, S. T. Nordhoff	4.15
LEMONS—	
Canon, S. T., Lamanda Park	$2.25
Flower, Growers Ft. Co	2.00
Euclid, or, Growers Ft. Co	2.65
Plain	1.25

CINCINNATI, Aug. 21.—Two cars oranges, two cars lemons sold.

VALENCIAS—	Avge.
Airship, V. C., Fillmore	$3.50
Echo, S. T., Pasadena	2.55
Oriole, V. C., Fillmore	3.25
LEMONS—	
Blue Flag, Q. C., Corona	$1.70
Greyhound, S. A. Ex	2.90
Pet, S. A. Ex	3.50

HOW TO REFINISH AN OLD CHAIR.

An old oak chair can very easily be refinished with only one coat of material. The necessary time taken for this work by the housewife would be very insignificant. A chair of this character will be found in nearly every household, and it will usually be badly scuffed and worn. These badly scarred surfaces should first be sanded lightly with 00 sandpaper; one sheet at one cent will be quite sufficient for this purpose. The sandpaper will usually turn the old varnish white, but this effect will entirely disappear when the new finish is applied. All dust and loose particles should then be removed and the chair is ready for one coat of varnish stain, dark oak. A chair of this sort will require about one pint of the stain, and it should be applied with a soft bristle brush. This stain is ready for immediate use. It should be well brushed out, so that the grain of the oak will not be entirely obliterated. Start at the bottom and work up, so that the chair can be moved easily without touching the finished parts. A still more durable finish can be obtained by applying a second coat of a durable varnish.

The varnish stain will dry thoroughly over night and produces a very durable finish for all kinds of furniture, woodwork, floors, etc. It is made in cherry, dark oak, ebony, green, light oak, mahogany, rosewood, walnut and ground. One pint of the stain and one sheet of sandpaper is all that is necessary to make an old chair like new.

TRY TO WORK THINGS OUT.

If you get the worst of it some way
And feel inclined to raise a row,
Just smother what you'd like to say
And try to work things out somehow.

—Chas. H. Meiers.

There is no duty we so much underrate as the duty of being happy.—R. L. Stevenson.

P & O

SUCCESS PLOWS

A plow that has been on the market for years without a change in its construction; a plow that was so well built at the start that no changes have been necessary; a plow that has the largest sale of any riding plow made; a plow that is so simple it cannot get out of order, so strong that it lasts a lifetime—

Such is The Success.

It has the strongest and simplest frame ever put on a riding plow; the best hitch, the best landing device, the best rolling cutter, and bottoms ever made. It has but two levers, but they give the same wide range of adjustments as plows with three or four levers.

The **Success** is heavier; it has more material, but fewer parts, and therefore less complicated, than others. That is why it is simple, strong and durable. That is why we call it the **Success.**

The Success is a medium-priced plow that will work anywhere, and it is backed by an unqualified guarantee. Why buy a high priced plow when you can accomplish the same results with the Success, a medium-priced plow?

When so ordered, we furnish Alfalfa Shares, which are broader than the ordinary shares.

Insist on getting **P. & O.** Canton Plows, Harrows, Planters, Cultivators, Potato Diggers, Stalk Cutters, etc., from your dealer. Send for Catalog C 76

PARLIN & ORENDORFF CO., Canton, Ill.

Baker & Hamilton, Agents

San Francisco Sacramento Los Angeles

No Death Traps
In the Layne System

The Layne Patended Steel Pit is a Safe Pit

Workman Falls 90 Feet To An Untimely Death

Falling down a ninety-foot shaft in some mysterious manner while at work at the Buena Vista pumping station in Elysian Park, E. J. McComb, 67, a veteran employe of the water department, was killed at about 5 o'clock Friday morning. The body fell into the water at the bottom of the shaft, and was not recovered until 7:15 o'clock Friday morning.

No one witnessed the accident, but it is believed that the man lost his balance while at work at the top of the deep shaft, and fell, striking the circular stairway inside of the well as he fell.

Fell Into Water.

The shaft leads to a tunnel under the Los Angeles river. The tunnel is filled with water forty feet deep. Work was immediately started to pump out this water, and the body was reached after two and one-half hours' work. Coroner Hartwell was immediately notified, and the body was taken to Pierce Bros.' undertaking establishment.

McComb had been an employe of the city water department for twenty years. He served under the late President McKinley when the martyred president was a colonel. When McKinley visited Los Angeles, while president, he sent for McComb, and the two visited for a long time.—News Item.

No Open Pit

No going down into the pit to tighten bolts, pack boxes, grease bearings, etc. All lubricating and adjusting is done from the outside at the pump head above the ground.

Sand Kills Other Pumps

but does not affect the

Layne Pat'd Centrifugal Pump Screen and Steel Pit

The greatest water developer in the world today. Gives more water at less expense than any pump now in use.

Write for Catalogue 28

It fully describes the *Layne Pat'd Pump* and *System* and also contains data and information that will prove valuable to every irrigator. Free.

Layne & Bowler Co.

MANUFACTURERS

P. D. Bowler C. L. Michod

Violet and Santa Fe Avenue

F 6543 **Los Angeles, California** Main 1141

(Telegram)

New Franklin, Mo., May 3-4-1911.

The Frost Prevention Co., Balboa Bldg., San Francisco.

Lit heaters last night burned them five hours sixty heaters per acre raised temperature five degrees within thirty minutes after lighting held same temperature until closed down we consider them a great success never received thermometer only wire and bill Rush thermometer.

T. H. TODD.

141 A. M.

Chico, Cal., July 26th, 1911.

Frost Prevention Co.,
San Francisco.

Dear Sirs:

In reply to yours of the 25th would say that there ought to be good sale for the Bolton Orchard Heater this year as they have proven a success during last spring's frost. I have used the heaters four years. In 1908 I had 80 per acre in apricot orchard, none in the almond orchard, just across the road. There was no sign of frost in the apricot orchard, and the almonds froze off clean. This year (1911) I had the heaters in the almond orchard and none in apricot. Apricots froze clean except a few in tops of trees 18 or 19 feet from ground. No sign of frost in almond trees. N. C. Jessee and A. Gee both used heaters with the same result. These three orchards contain nearly all the almonds for quite a large scope of country. I think this proves all you claim for the heaters. There was no need to use them in 1909 or 1910. Yours truly,

(Signed) H. Losee,
R. 3, B. 141, Chico, Cal.

BEAR CREEK ORCHARDS.
W. S. Brooke, Manager.
Medford, Oregon, U. S. A.,
July 25, 1911.

The Frost Prevention Co.,
San Francisco, Cal.

Gentlemen:

Replying to your favor of the 18th inst., beg to state that we used about 3,500 of the Bolton Orchard Heaters during the past season and though there were several mornings that the temperature was as low as 24 degrees, we pulled out a crop of about thirty-five carloads from fifty acres. There were seven mornings, any one of which would have practically annihilated our crop had we not been equipped to fight the frost. We expect to equip another fifty acres for the coming season, and while we dreaded the magnitude of the undertaking, one hundred acres does not look as large to us now as fifty did before we undertook it. Yours very truly,

THE BEAR CREEK ORCHARDS.
By W. S. Brooke, Manager.

The Pioneer—Without a Peer

BOLTON ORCHARD HEATERS

Place your order immediately if you want us to guarantee delivery

BEST BY EVERY TEST

SOLD ON ITS MERITS

THESE TESTIMONIALS ARE IRREFUTABLE
SEND FOR OUR FULL CROP PROPOSITION

Frost Prevention Co.

107 So. Broadway, Los Angeles — Bank of Italy Building, San Francisco

F. H. HAMMER, So. Cal. Representative

CHERRY HILL FRUIT FARM.
The E. H. Everett Co., Owners. H. A. Albyn, Mgr.
Toboso, Licking Co., Ohio.
July 21, 1911.

The Frost Prevention Co.,
San Francisco, Cal.

Dear Sirs:

We used the small heaters for three evenings. We did not have the frost that we sometimes have, but cold enough that all blossoms where we did not use the pots were killed. We only lighted every third pot, which raised the temperature six degrees. Six hours has been the limit as to time of burning them. We used fuel oil from the Standard Oil Co. We have just tried an experiment with the crude oil from the well, as we have several wells of our own, and find that it burns equally as long as this fuel oil. Yours very truly,

H. A. ALBYN.

Owensville, Ind., April 3, 1911.

The Frost Prevention Co.,
San Francisco, Cal.

Gentlemen:

Am trying the Smudge Pots which I purchased from you one year ago, and meeting with success. Have used them two nights. It being a new thing in this part of the country, the newspapers are taking kindly to it and publishing results. Have had many inquiries regarding same. Would be pleased to have you send by mail one or two of your new attachments you wrote me about, to try in this community. Yours respectfully,

(Signed) P. S. ARMSTRONG.
R. F. D. 19, Owensville, Ind.

THE FIRST NATIONAL BANK OF ROSWELL.
Roswell, New Mexico.
W. H. Godair, Pres.
A. Pruit, Vice-Pres.
E. A. Cahoon, Cashier.
A. Hanny, Asst. Cashier.
C. Hobbs, Asst. Cashier.
July 10th, 1911.

Frost Prevention Company,
San Francisco, Calif.

Gentlemen:

In reply to inquiry from your local agent, the writer begs to advise you that three thousand of your two-gallon Bolton Smudge Pots were used in his orchard during the past spring and were eminently satisfactory. While the cold weather here was not excessive, still the writer lit about one-third of the pots on three nights and found that number ample to control the temperature in his 45 acre orchard. By actual test, the pots burned from eleven to thirteen hours, according to the wind conditions. The writer selected this pot after testing out several of the most prominent makes.

Yours very truly,

(Signed) A. HANNY.

Give the Pomona Patent Pressure Gate a Trial

No rubber or wooden facing to rot or wear out. Absolutely water tight when closed. Locking mechanism is protected against rust or clogging with sand or dirt. Simple in construction. Cheap in price and as durable as solid iron.

THE LOCKING DEVICE is the simplest made, merely a tapering screw with split tapering nut socket. It locks the cover in any desired position or locks the faces, making an ABSOLUTELY WATER TIGHT JOINT.

TWO FOOT HANDLE FURNISHED WITH EVERY PRESSURE GATE FREE.

ALSO A FULL LINE OF CIRCULAR VALVES FOR ORCHARD AND ALFALFA IRRIGATION CARRIED IN STOCK.

Write for descriptive circrcular and price list.

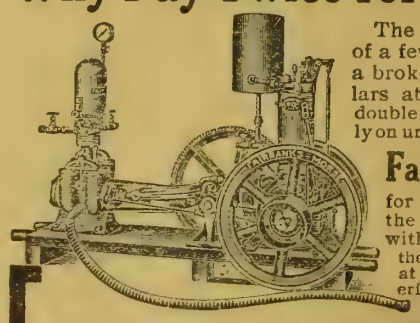
POMONA MFG. CO.
POMONA, CAL.

We have a complete stock at all times of both

Hand and Power Spraying Outfits

Our outfits have the most improved features and are the best to be had. Our improved Agitator will mix any solution that is mixable.

Why Pay Twice for Your Spray Outfit?



The lack of sufficient pressure or the loss of a few days' time in spraying season from a broken-down outfit will cost you many dollars at the end of the season—more than double the cost of your spray outfit. Is it safe to rely on unknown outfits when you can get a reliable

Fairbanks-Morse Spray Outfit

for almost the same price? They put you on the safe side and insure your crop. Equipped with the well-known Fairbanks-Morse engine, they give an abundance of power and operate at the lowest cost. Then you can use this powerful engine for your work, such as pumping water, sawing wood, etc. Operates on gasoline, kerosene, distillate or alcohol. Outfit can also be furnished mounted on trucks with tower and tank complete.

Mention this publication and send at once for new Spray Book No. SC 76

Fairbanks Morse & Co. Los Angeles, Cal.
Or address nearest of our 27 Branch Houses

Why Experiment with Inferior Pumps?

Buy a pump built on the Pacific Coast, and adapted to your needs.
Our pumps have been in use and on the market for years, and have stood the test of time.
Buy direct and save freight and jobbers' profits. Live, erecting agents wanted. Our retail prices are less than our competitors wholesale prices.

PEERLESS IRON WORKS
125-127 O St. Sacramento, Cal.

Cows Give 262 lbs. More Milk Daily

After substituting a part of their regular feed with Proteina, says a leading dairyman. ¶ Unequalled for Cows, Calves and Poultry, and fed at a comparative low cost.

46% PROTEIN - 10% FAT

Proteina is concentrated from the Soy Bean and contains 33⅓ more Protein.
The U. S. Agricultural Dept. says: "A bushel of Soy beans is at least twice as valuable for feed as a bushel of corn." ¶ POULTRYMEN FIND PROTEINA BETTER THAN BEEF SCRAPS FOR LAYING HENS. Write for signed letters from Poultrymen and Dairymen

Proteina SOY BEAN OIL MEAL
MANUFACTURED BY PACIFIC OIL MILLS SEATTLE

SOLD BY DEALERS OR PACIFIC OIL MILLS, SEATTLE

Germain Seed & Plant Co., So. California Agents

326-328-330 S. Main St., Los Angeles, Cal.

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511

Special This Issue --- Green Manure Crops

CALIFORNIA CULTIVATOR

An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch.

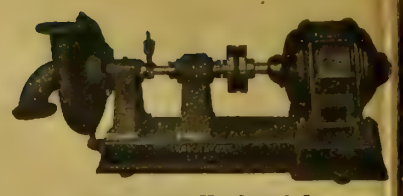
LOS ANGELES AUGUST 31, 1911 SAN FRANCISCO

Artesian Wells on Kern Meadows Land

New Type Vertical Pump

Does It Not Seem Reasonable

To Assume That a Company



New Type Horizontal

which has been manufacturing one line of goods for over thirty years must be in a better position to furnish superior goods than one which has been in business a few months or years? The old concern has experienced engineers, superior shop facilities and, above all, a reputation and standing to maintain.

Krogh Pumps Have Been Built for 33 Years

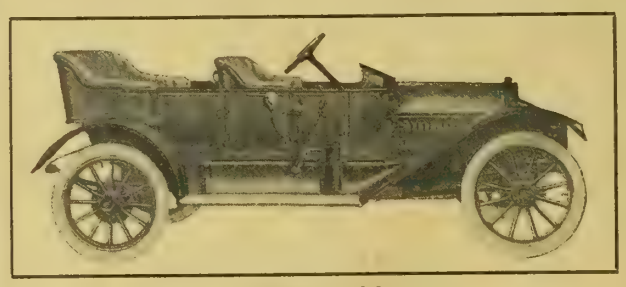
Our New Bulletin, C-12, tells about them.

Krogh Manufacturing Company

Our Branch House, 206 N. Los Angeles St., Los Angeles, carries a complete stock

149-157 Beale St., SAN FRANCISCO

IMPERIAL GUARANTEED AUTOMOBILES.



Model 44

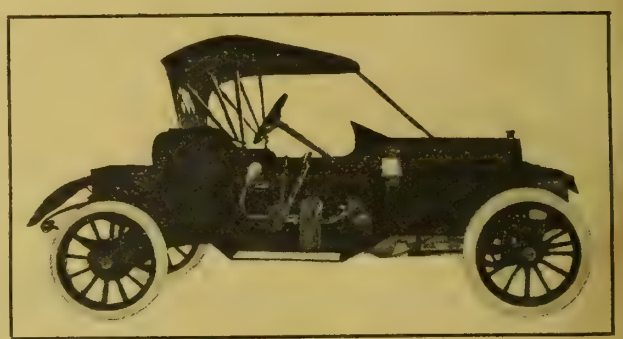
Imperial Models for 1912

Our motto has been "The Get There Kind," and the 1909 and 1910 and 1911 lines of Imperial Cars have become so famous for quiet and beautiful operation, remarkable flexibility and superb hill climbing capacity, that we feel proud to introduce to you our innovations for 1912. Model 43, a snappy and racy looking gentleman's roadster, shown below, without a peer on the market; Model 44, above, our semi-torpedo, five-passenger, fore door touring car, with its graceful and beautiful lines to recommend it to any connoisseur. No expense, time or effort has been spared to produce a highly artistic, practical and refined product. Going beyond outside appearances, Imperial power plants are free from superfluous parts—are capable not only of developing power smoothly, easily and without strain, but with reciprocating parts utilizing every ounce of power when the maximum is needed.

Absolutely Guaranteed

Arnott & Company have taken on the Imperial line as a permanent addition to their other high grade agencies. The high standing of this company attained during the last eighteen years is guarantee that these cars are right in every way. We have eight sample cars on exhibition and solicit the most rigid examination, especially from buyers who are now purchasing their second car and who will recognize the high grade of the "Imperial."

We want an energetic owner-driver agent for this line in each community and can offer a most liberal agency contract that will justify giving us your entire time in selling these cars at a handsome profit. Write today for catalogue and if you are in position to act as agent let us know.



Model 43

ARNOTT QUALITY GUARANTEED ARNOTT & CO. INC. 112-118 So. LOS ANGELES ST., LOS ANGELES, CALIF. ARNOTT QUALITY GUARANTEED

How Much

are Your Buildings and Contents Worth?

Are They Worth 35 Cents?

Yes, this is said seriously. Don't you know that the average farm fire is a total loss? Yet ninety-nine fires out of every hundred could be extinguished if proper equipment were at hand. What would you do if fire were to break out in your farm buildings tonight?

THE MAGIC EXTINGUISHER

will put out ninety-nine out of every hundred of these fires.

To operate it, turn it upside down.

It throws a chemically charged stream forty times more effective than water to a distance of 50 ft.

It costs $12.00 delivered at your nearest railroad station.

It can be used any number of times and when emptied can be re-charged at a cost of 35 cents.

Think of the additional security if you had one of these on each floor of your dwelling and in each building on your ranch. Can you afford to take the risk of losing any of your buildings that an expenditure of 35 cents might save?

Order extinguishers today for each building on your ranch.

"Fire Fighting on the Farm," an instructive booklet free for the asking.

1237 So. Olive St. Los Angeles — **Gorham Fire Apparatus Co.** — **48 Fremont St. San Francisco**

Thoroughbred Poland China Swine Barred Rock Poultry

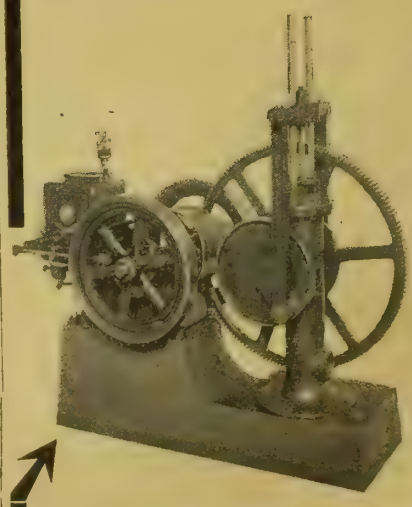
High Grade Stock of Best Strains. Young Stock for Sale.

M. Bassett *Hanford, Cal*

The Whiting Jersey Stock Farm Co.

Is making the very best strains of blood fres from the island of Jersey a specialty. **Whiting Jersey Stock Farm Co. Heber, Cal.**

Have YoU Seen Gregory's Triumph Engine with Direct Connected Pump Jack?

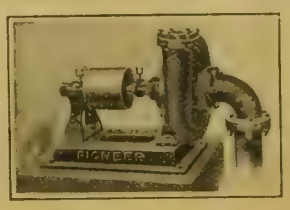


If you have not, you have not seen the latest thing in a perfect little pumping plant. Note the simplicity of this jack; direct lift each side of the piston; no wobbling or jerking but a smooth, even stroke. Engine is fitted with pulley, so that you can run the washing machine, the churn, the cream separator, and be such a handy little helper about the place.

We have them in 1 and 2 H. P., and don't forget that we carry a very large stock of engines and pumps of all sizes. Come and see us, or send for catalogue.

WM. GREGORY, Sales Room

602 to 606 N. Main St., Los Angeles, Cal.



Why Experiment with Inferior Pum

Buy a pump built on the Pacific Coast, and adapted to needs.

Our pumps have been in use and on the market for years have stood the test of time.

Buy direct and save freight and jobbers' profits. Live, er agents wanted. Our retail prices are less than our compe wholesale prices.

PEERLESS IRON WORKS

125-127 O St. Sacramento,

California Cultivator

Vol. XXXVII. No. 9. LOS ANGELES: THURSDAY, AUGUST 31, 1911 One Dollar the Year

The Nitrogen-Gathering Value of the Legumes

While the Value of the Legumes for Green Manuring Has Long Been Known, it Has Remained for the Orchardists of California to Extensively Practice This Method of Fertilization, and the Results Produced Justify its Further Extension

It is known that the Romans used
e clovers for improving soil fertil-
y many years ago. Doubtless they
d not understand the whys and
herefores as well as the farmer of
day, but they did know that they got
sults. The farmers of the East have
served for many years good results
llowing a year or two of clover, but
seems to have been left for the
lifornia orchardists to reduce green
anuring to a science by the use of
gumes. For a score of years this
ethod of enriching the soil has been
llowed and we believe every year
s seen a material increase in the
actice. Probably it has obtained a
eater hold in citrus orchards than
deciduous, but even with deciduous
it growers the practice is increas-
; and would increase with greater
pidity were the deciduous orchards
the northern part of the state but
pplied with irrigating water which
ld be used at planting time. Some
the first green manuring crops were
natural growth of bur clover and
laria, rye and brome grass. This
to the adding of humus, the con-
vation of moisture and the benefit
the mechanical condition of the
. Later soil physicists developed
fact that former methods of soil
provement could be supplemented
h teeming millions of bacteria
ch would aid the agriculturalists
gathering the most expensive ele-
nt of plant food, nitrogen, a perfect
an of which surrounds the earth.
we have never considered that
great supply could be made avail-
for the use of the soil. Science
proven that this bacterial life has
power of grasping this nitrogen
making it available for the growth
family of plants called legumes.
family includes the clovers,
ns, peas, vetches, lupines and
y others.

ne most extensively used of these
mes has been the Canada field pea
the common vetch. The latter
h have been used more generally
not a combination of vetch seed
ucers in the Northwest made the
e almost prohibitive for manuring
oses. Enterprising seed men in
southern part of this state have
ly overcome this combination,
ever, and are now importing ship-
s of seed from Germany. This has
lted in securing the seed at much
satisfactory prices.

ing Time.

e most successful growers of
n manure crops sow vetch and
clover during the first half of
ember if possible to get the water
at time to properly fit the ground.
may be sown the latter half of
ember or even much later, but
arly seeding has such an advan-
tage that where possible the seed should be put into the ground to take advantage of as much growth as possible during the warmer days of early fall. With the walnut trees the grower is at a disadvantage because he must have clean ground for the gathering of his crop, and cannot sow till later. Before sowing the ground should be given a very thorough irrigation. It is then plowed or disked, harrowed down and the seed usually drilled in. Some, however, prefer broadcasting and harrowing. Immediately following the seeding the land is prepared for irrigation. This is usually done by the furrow method, although walnut growers sometimes prefer the basin method. If the former, a number of shallow furrows are laid between the rows of trees in the direction in which the water flows. Of course no cultivation is given or other care than the occasional irrigation, and this is timed according to the rains, but some growers are so anxious to fill their soil with moisture that rain or shine the irrigation is maintained through the entire winter season or until the time for turning under arrives.

Plowing Under.

Turning under should be not later than February in the citrus orchards of the South, while in the northern deciduous orchards a little later may be more desirable. In a citrus grove later than this would bring the plowing well towards or into the blossoming season, and the feeling obtains with practically all citrus growers that plowing at blossoming time is objectionable. The turning under may be with the ordinary moldboard plow, though the disk plow has gained in favor each year. It may be added also that the use of the disk is more satisfactory on sandy soils than heavy. For heavy soils the plow should be used. Some who are loath to disturb the soil deeply on account of interfering with the function of the surface roots, have used the ordinary disk harrow after crushing down the rank growth of the green manure crop. This cuts up and distributes the tender growth of the legume in the surface soil and probably does not give such complete decomposition results as when plowed under deeper. We doubt not that there is greater loss from burning out during the summer months than where more deeply covered.

Harrowing.

After plowing under the land is harrowed, care being taken that the teeth are set so as to drag over the surface rather than to catch and drag out the freshly plowed under crop. If the ground is filled with moisture and the growth has not become dry and hard, decomposition begins at once and in a short time deep cultivation may be given. After turning over the green manure the cultivation cannot be too complete, and on sandy soil especially, every effort should be made to compact it as much as possible.

Inoculation.

We noted the fact that it has been found that millions of minute life join in making this green manuring of greater value. It has been developed, however, that some soil seems to be entirely deficient in the particular form of bacteria which will work upon certain of these crops. That is, a soil which has grown alfalfa successfully may be deficient in the bacteria which induce strongest and best growth of peas or other legumes. These bacteria locate upon the roots of growing plants and cause growth of nodules which might be taken for an excrescence or a disease, but it has been shown that the legume which shows the greatest number of these nodules shows the darkest and richest growth of top. This has been found to be because these nodules are at places where the atmospheric nitrogen is gathered in and made available for the use of the plant. Therefore, a soil condition must obtain which will freely admit the atmosphere into the soil.

Where this deficiency of the beneficial bacteria is observed, science has come to the rescue and prepared cultures which have been used to transfer to the soil sufficient of the bacteria to render the assistance required. This was carried to an extreme at one time and through exaggerated claims made for the virtues of this method many obtained the idea that one could carry in a capsule in the vest pocket a culture which would fertilize a ten-acre field. It is true, however, that the cultures may be produced artificially and introduced into the soil through sprinkling of seed to be sown over soil and the soil afterwards applied to the field. The more general method which obtains at present, however, is to secure soil from a field which has successfully grown the particular legume in question, which is moistened slightly and mixed with the seed or applied direct to the field during seeding time. Some striking results have been obtained by introducing the culture in a portion of a field and withholding it from another. This has shown conclusively the beneficial effects of inoculation.

In Bulletin No. 190 of the Bureau of Plant Industry, engravings are shown of the fields at Chico wherein horse-beans show vastly greater growth on the inoculated portion of the field. The same crop, however, in Southern California does not seem to need inoculation.

Cover Crop Experiments

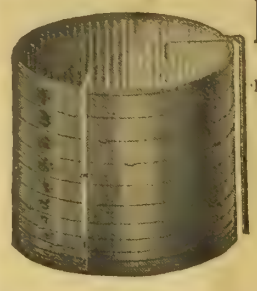
By J. H. Norton, Citrus Ex. Sta., Riverside.

"Of what value is the cover crop nitrogen?" is a question often asked and with no definite answer up to the present time, and this article is not intended as a final answer to this question. But at this season of the year we are seeking all the information we can get on cover crops and any hint of an answer to this question should be put forth.

In the fall of 1909 this station undertook the field work on the solution of this question. The first year's work did not give satisfactory results owing to various experimental errors that have since been eliminated. This year's work seems to have some very promising figures in store and it is certainly not out of place to anticipate these figures.

This experiment was commenced by surveying out seventeen plots, 20 feet by 200 feet, side by side, and numbering them from 1 to 17. In the fall, about the first of September of each year, these plots have been sown to their respective cover crop, following much the custom of cover crop practice in the groves. The odd numbered plots contained the leguminous cover crops, a different variety on each plot, while the even numbered plots contained a non-leguminous crop, barley. In the spring at the usual time for plowing under cover crops these plots were plowed, turning the crop to a depth of about nine inches with an eighteen-inch moldboard plow. Annual non-leguminous garden crops were planted across these plots and account taken of the growth of each annual crop on each of these plots with the point in view of determining the value to the soil of each of these cover crops. On half of the barley plots various amounts of nitrate of soda have been used so as to be able to get these benefits in terms of nitrate of soda. In the summer of 1910 ten varieties of garden crops were planted, but trouble was experienced in growing so many varieties on so small an area, and, besides, many of these crops did not respond well to the nitrate of soda. In the summer of 1911 three garden crops only were used.

(Continued in Page 194.)



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COVER CROP EXPERIMENTS.

(Continued from Page 193.)

These three crops represent the three parts of plant growth. The corn crop, the ear itself represents the influence of these various cover crops on the production of the fruit of a plant. The cabbage represents the effect of cover crops on the production of plant growth, while the mangels represent the influence of the various cover crops on root development. Then, having the three parts of plant growth represented, and with no other information to draw on, is it not fair to conclude that whatever effect is produced on these garden crops will be produced on citrus groves? Our equipment is not great enough to undertake this experiment in the citrus groves at present and besides the garden crops give quicker returns for the experiment.

No harvesting of these garden crops has been done up to the present time except two of the three varieties of cabbage used. Judging from the figures already obtained, as well as the appearance of the remaining crops, we seem to have the following results. The figures used in expressing the yields of cover crops are calculated to the acre basis and are weights of the tops of the green crop cut at the surface of the ground.

The yield of the garden crops is not as good on plot 10 following barley, 12½ tons per acre, where 1080 pounds of nitrate of soda (162 pounds of N) has been used, as it is on either plots 11, following Tangier peas, 18 tons per acre, or plot 9, following Canadian field peas, 15½ tons per acre. This 1080 pounds of nitrate of soda on plot 10 is the highest amount of nitrate used on any of the barley plots. Plot 10 has slightly better garden crops than any leguminous cover crop plot, except the two mentioned above. The garden crops following barley where various amounts of nitrate of soda have been used are quite consistent with the amounts of nitrate used.

Then rating the value of the various leguminous cover crops, judging from this one experiment and one year's results, I would place field peas (15½ tons) and Tangier peas (18 tons) on a par, followed by melilotus indicum (15½ tons) and fenugreek (12½) tons; then following these in order I would place lentils (15 tons), improved vetch (U. S. Dept. of Agr., B. P. I. 13410, 16 tons), burr clover (13 tons), and common vetch (12½ tons).

The reader must remember that he is not producing the yields of cover crops as have been given in this paper for reasons that you are growing your cover crops in groves where only about half the soil is producing cover crop, and it is not possible to be able to care for the crop on a commercial basis as has been done on these small plots. So do not deceive yourself into believing that the nitrogen in one acre of your cover crop is equivalent to 162 pounds of nitrogen applied in some commercial form. Determine accurately what yield of cover crop you are producing; then experiment station work along these lines will be all the more valuable to you.

Cover Crops for Vineyards and Deciduous Orchards

By Mrs. M. E. Sherman.

The use of cover crops to increase the fertility of the soil is not new in horticulture, for back in the countries of summer rainfall or those known as humid, for many years the farmers have plowed under a clover crop to increase the richness of the soil. This use was empirical and only when the subject became a matter of scientific study was the value of humus understood. The past fifty years has given us much research work into the soil and into conditions of plant growth. The impetus given by the profound studies of Darwin directed the student mind first to animal life and then in following down to the lowest forms, it was found at times that the vegetable life was divided from it by a line so invisible that it was sometimes impossible to decide whether a growth belonged to the animal or vegetable world.

Desert Soils.

As Dr. Shaw has coined the appropriate phrase "Humus the minus quantity in our soils," that fittingly covers the reasons for using cover crops. The content of humus is low in arid countries all over the world. The reason for this is that the natural growths are shallow rooted annuals. These spring up miraculously from the seed in almost a day, when the rains fall lightly on the parched ground. These plants rush along to blooming and seed-making during the time of moisture. When the water in the soil has been exhausted, the field turns yellow, then brown, while the warm wind tugs at the dried stems and withered leaves until they are blown away in tiny fragments. They do not rot and form humus in the soil after having been beaten down into the earth by showers. After this dessication of the plants by the air the portions left are too dry and mineral to be of use to plant life. The early farmers of wheat found out that the turning under of the dried stubble was distinctly a detriment to the next crops, as the straw did not rot and only helped to dry out the soil. The old grain farmers will tell you of plowing up land that had lain without a crop for four of five seasons and finding the bright unrotted straw safely tucked away in its little bed unharmed by the rain storms. The reason then for burning off the stubble, that looks wasteful to the farmer from the East, where the summer rainfall is abundant, is one that has been founded on long experience. We cannot look for increased fertility of soil in California in turning under a cured crop. Even the strawy portion of manure is often not rotted when spread late in the winter time.

Cover Crops.

Cover crops in California must be those that can be grown and disposed of in the winter time, as the use of water to irrigate in the summer is not advisable except in fruits like oranges, lemons and olives. The deciduous orchard and vineyard ripening their fruit require summer harvesting, open spaces and summer growths are interfered with seriously. There is a cheap way used somewhat in Fresno County of planting peach orchards to alfalfa. The orchards are old ones

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and on poor, sandy soil. The constant irrigation of the alfalfa has helped them greatly. The principal objection to this is the gophers that work on the roots of the trees as well as the fact that the hay made in the orchard is worth all it will sell for to handle. I would not take a crop of alfalfa hay in the cocks in an orchard as a gift; as the cost of carrying it out in forkfuls to the wagons is too great.

Field Peas.

The winter growth of Tangier and common field peas has been good with us. The expense of the seed is heavy and for this reason the crop has been limited to the amount of seed we produced each season on the plot set aside for this purpose. The labor of getting the seed into the ground has been helped by a simple way of adding it to the manure hauled out in the orchards. When a manure spreader is used the sowing is even and the results better than where the manure is thrown off in chunks. The land in the orchard is in a well cultivated condition and with the manure on top it forms a moist mulch to hold the rainfall and dew. We usually have a few showers in October and November that start the peas growing and then the dews will keep the young plants watered.

It may be observed that in the fields here and there are bunches of volunteer barley that is heading out by the time the sown barley is first peeping out to tinge the brown earth faintly with tender green. This early maturing barley was simply seed that was ready in the ground to grow with the first moisture. Now by observing the same conditions with the cover crop we can secure a like growth. There is a further thought here that the manure used helps the peas to push along and is in turn made into the best possible shape for rapid rotting.

In the Vineyard.

The Malaga grape vineyard can be handled in the same way by spreading the manure after grapes are gathered. The raisin grape and Emperor come so late that this is not practical. We have scattered the bur clover seed over the surface before the pickers came and allowed the tramping to put it into the ground. A few Tangier peas used in the same way gave good results as they bloomed before the plowing reached them. I am giving this suggestion in hope others will try it, there may arise unseen objection to the practice on further trial. In all farming operations the season has much to do with success and we can only work on the line of average results. If we can sow the cover crop without additional labor of plowing or cultivating the land we can afford to have more of them to plow under each year.

Beware.

There are bewares in every business and one of the greatest in handling a cover crop is that of letting it grow too old. I have seen so many people let a cover crop get ahead of them. It is detrimental instead of helpful to plow under a mass of dry stems and leaves. As soon as the bloom begins to form start the plows to running. The growth must go under green or it will repeat the experience of the grain farmers by turning up unrotted and act as a dryer to the soil. Better put it under a little too green than too dry. In our California soils sourness is not feared. We have too much alkali and can turn under

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more green stuff and keep on doing it than would be proper in the East. So far no one has made the land sour in California with green manuring.

Suggestions.

I have not gone into the merits of the various plants for cover crops, but have mentioned those we have had in use. There are many others of equal merit as nitrogen producers and humus makers. In practical ranching the cents are counted and the plants that give us best growth are sometimes not available from the money standpoint. The winter vetch seed has not been obtainable at any price much of the time with us. The bur clover is a natural growh with us and we know that every dollar invested will make returns, for if it is once planted, every winter will bring it into a heavy growth. In the older portion of the San Joaquin Valley we have tried many new plants and after all, the only really bad one that has been started there is the Johnson grass. With the peas and vetch we are safe from introducing anything that will prove a pest later on. I often think we run too much after new things rather than trying to improve those we have by developing them to perfection.

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Favorite Green Cover Crop

We recently asked Mr. O. M. Morris of the Morris and Snow Seed Co., as to the different legumes which are grown for cover crops and the amount of seed per acre. He answered us:

"Very few cow peas are used as cover crop, principally Canadian field peas, vetch, bur clover and to some extent fenugreek. Lupins are almost too expensive to be very popular as a green cover crop, although they are used to some extent in France for this purpose. Some growers around Rialto are having good results with dwarf Essex rape, but probably 65 to 70 per cent favor the vetch and they will commence planting this from the last of August and continue up until the latter part of October for citrus groves. For walnut groves they generally sow it in dry and depend upon the rains instead of irrigating, but we would advise irrigating and planting it much earlier in the walnut groves where it is possible and plowing it under during the wet season and avoid considerable trouble in the conquering before the dry season comes on. However, it can be planted if irrigated, at any season of the year. We recommend 40 pounds of vetch, 60 pounds of peas or 15 to 20 pounds of bur clover to the acre.

"Any of these cover crops increase the nitrogen in the soil and of course naturally increase its fertility for beets or any garden truck and we believe it has proven entirely satisfactory as this green crop can be grown during the winter without much loss of time to other crops. Any of these crops can be planted as soon as the cover crop is sufficiently rotted down to allow seeding.

"These cover crops have a double advantage by filling the soil with roots and increasing the humus besides the nitrogen they store in the soil."

* * * *

Along the same line Mr. Aggeler of Aggeler & Musser informs us:

"Before the nitrogen producing plant was thoroughly understood winter rye was the principal cover crop. This produced the humus but not the nitrogen. At present vetch is chiefly used for this purpose because if planted at the proper season it would produce more humus and as much nitrogen as any other crop used for this purpose. The principal crops for producing nitrogen are vetch, Canadian peas, fenugreek, bur clover, mellilotus and cow peas, of which there are several varieties. The vetch should be planted before the first of November, even as early as the first of September in order to give it plenty of time to develop a full growth. Bur clover, mellilotus and peas should be planted from October 1 to January 1.

Peas are preferred for late planting in walnut orchards. Our observation of fenugreek would indicate that it thrives better on heavy land than on sandy land. Vetch, peas and fenugreek should be sown like grain with a drill. This makes irrigation easier and more thorough than sowing broadcast.

"We have made several attempts at growing peas and vetch for seed in Southern California, but even under favorable circumstances the yield is too small to make it profitable. Up until last year all of the vetch sown in California was grown on the Pacific Coast, but we found a cheaper market."

Improving Sandy Soils by Growing Forage Crops

In farm management the maintenance of soil fertility is always a most vital problem, and on lands sufficiently fertile all that is necessary to prevent deterioration is to hold the crop producing power of the soil at the same level. Adequate fertility in soils, however, is not very common, and generally the first question is how the fertility may be increased. The methods of soil improvement vary with different kinds of soil, and the difficulties encountered are largely determined by the soil character. Light soils, for instance, are usually much more difficult to improve than similarly located heavy soils. A consideration of this subject, together with the results secured in the improvement of the sandy soils in south Jersey by means of growing forage crops, has recently been presented by E. B. Voorhees and J. G. Lipman, of the New Jersey Experiment Station.

In discussing the general character of light soils, the authors point out that unimproved sandy or sandy loam soils can not furnish as much plant food or supply as much moisture to growing crops as the clay and clay loam soils are capable of doing. Attention is further called to the fact that the coarseness of sandy soils prevents them from readily retaining the plant food applied to them and the moisture they receive. The fertilizers given are easily washed downward into the subsoil by the rains, and dry weather soon robs these soils of their moisture. Extremely open or coarse, sandy soils are considered amenable to profitable cultivation only when rainfall is abundant and well distributed, the subsoil sufficiently compact, and the water table near enough to the surface.

In treating of the physical properties of sandy soils, their relation to moisture, heat, and air is discussed. It is shown that owing to their great permeability sandy soils may be tilled early in the spring, when heavier soils are still too wet to be worked. They are earlier and warmer than heavy soils because they are drier. On the other hand, these loose and open soils quickly lose their water by both percolation and evaporation, and at the same time, on account of their limited capillary power, are unable to replenish this loss rapidly by drawing upon the water supply of the subsoil. In the heavier and more compact types of soil capillarity is much more active.

The openness of light soils admits air freely and thus intensifies the chemical and bacteriological changes going on in the soil. Under these conditions plant food is made available more quickly and the rock particles weather more effectively than under the conditions obtaining in a heavy soil, but these processes are carried on so rapidly that the humus burns out too fast and the losses of plant food are too great.

Bacterial Activity.

Chemical studies of the sandy soils of south Jersey reveal for the most part their poverty in plant food. Some

soil samples examined contained as much as 98 per cent of pure quartz. Lime was found in small quantities, magnesia and potash in traces only, and the proportion of organic matter was also very low.

It is stated that the bacterial activity of soils is directly influenced by the supply of air, moisture and warmth, and by the chemical composition. Well-aerated or open soils favor the development of bacteria requiring large quantities of air for their growth, and these species cause an intense decomposition of the humus. This is offset to a great extent by the rapid loss of water from these soils, as the bacteria can not multiply when the soil moisture falls below a certain point. In the heavier soils not so well aerated and not so readily affected by dry weather, the changes in the development of bacteria are not so sudden, and therefore the supply of plant food, and especially of nitrogen, is much more uniform than in the open sandy soils.

Secure Humus.

For the improvement of sandy soils it is recommended that thorough aeration be discouraged by methods of tillage, by applications of fine-grained materials or of substances readily pulverized, and by additions of large quantities of humus-forming matter such as green crops or barnyard manure. Sufficient humus in the soil prevents the too ready access of air and increases the moisture-holding capacity of the soil. Although sandy soils are quite poor in plant food this condition does not preclude the possibility of their improvement. Phosphoric acid and potash may be supplied at a comparatively small cost and the humus may be furnished in either animal manures or green manures. In considering this phase of the work the authors show that the use of animal manures is not indispensable. They regard horse manure as too expensive for general farm crops, because it is not always handy and also as injurious in some cases through the introduction with it of weeds and fungus diseases. The experiments they conducted were made with a view of showing that the humus content of sandy soils could be increased by means of green manuring and the use of fertilizers alone. Systems of green manuring were found particularly effective in this connection on account of the relatively greater need of nitrogen and humus in light soils and their greater power to convert green crops turned under into available plant food. Leguminous crops, such as crimson clover, cowpeas, soy beans, vetches, etc., are recommended for this purpose because they add both humus and nitrogen to the soil. The limitations of green manuring enumerated are the use of large quantities of water by the crops, the need of an abundant supply of phosphoric acid, potash, and lime in the soil, and the drying effect of the green crops when plowed under. Where the rainfall is sufficient the disadvantages of green manuring are largely reduced.

With reference to the activities of germs in the soil it is stated that by increasing the amount of humus in sandy soil its water holding capacity is increased and thereby a more uniform bacterial development and a more uniform supply of available plant food assured. The increase of humus in sandy soils encourages the growth of bacteria as a result of the greater content of organic matter and of moisture, and their development is discouraged on account of a less thorough aeration of the soil.

Beneficial Bacteria.

The nitrogen fixing or nitrogen gathering bacteria associated with the growth of leguminous plants find the conditions existing in sandy soils extremely favorable for their development and for the fixation of large amounts of atmospheric nitrogen. The facility with which the air circulates in these soils favors the formation of nodules on the roots of leguminous crops. It is pointed out that the nodule bacteria take considerable quantities of nitrogen or oxygen from the air surrounding the nodules, and as in sandy soils this air is frequently renewed, the best conditions for the growth of the organisms are created. It has been observed that in compact, fine grained soils, where the air does not penetrate so readily to greater depths, the nodules on the roots are all near the surface, whereas in sandy soils they are distributed lower down on the roots of the plants. Another factor strongly favoring the fixation of nitrogen in sandy soils is the comparatively small proportion of available nitrogen present in them.

It is pointed out that leguminous crops new to a particular region may fail to develop nodules because the proper organisms are not present in the soil. In the experiments conducted, soy beans grown on one plat during the first season failed to develop nodules, remained yellow and small, and evidently suffered for lack of nitrogen, while a crop of cow peas on an adjoining plat grew vigorously and was of a dark color. The soy beans had no nodules on their roots, while the cow peas were abundantly provided with them, showing that the bacteria producing nodules in the two crops are not the same and that the soy bean germs are not naturally present in the sandy soils of South Jersey. When some earth was obtained from a field where a vigorous crop of soy beans had been raised and applied to the soils in question, very satisfactory yields of soy beans were as a rule secured.

Lime.

While large amounts of lime are not required for sandy soils, applications of lime are of value in that they encourage the formation of humus substances which help to fix potash and phosphoric acid. As lime encourages the actiivties of various kinds of soil bacteria and thus tends to hasten the process of decay and nitrification, sandy soils should be limed less frequently and smaller dressings should be given than in treating heavy soils. Ground unburned lime is likely to give better results than burned and slaked lime. One-half ton per acre of ground oyster shell lime may show results on sandy soils while remaining entirely without effect on a heavy soil. It was observed that an adequate supply of lime is important in both heavy and light soils in promoting the growth of most leguminous crops, and especially of alfalfa and of various clovers.

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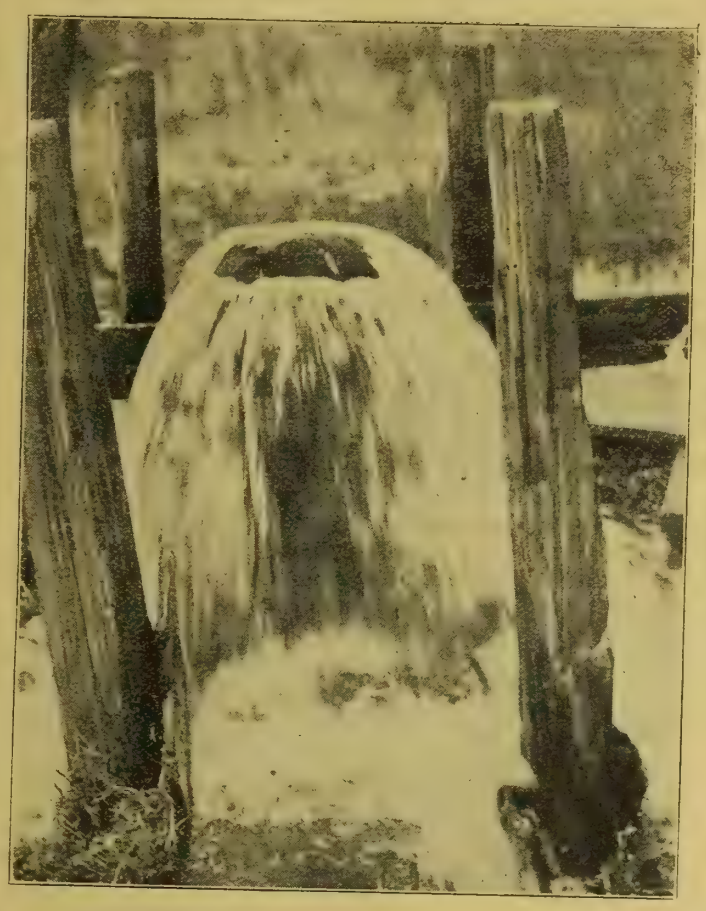

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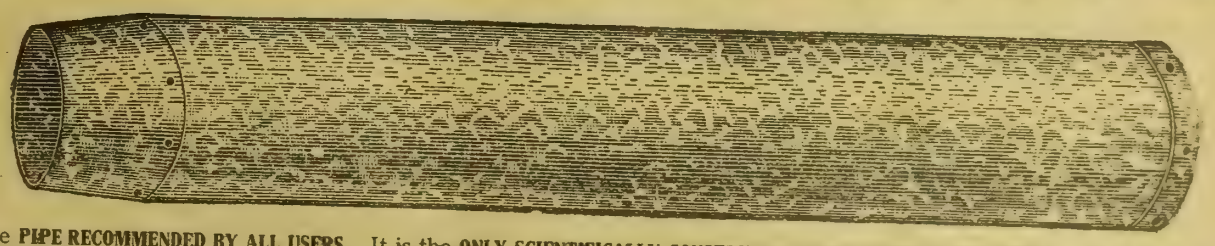

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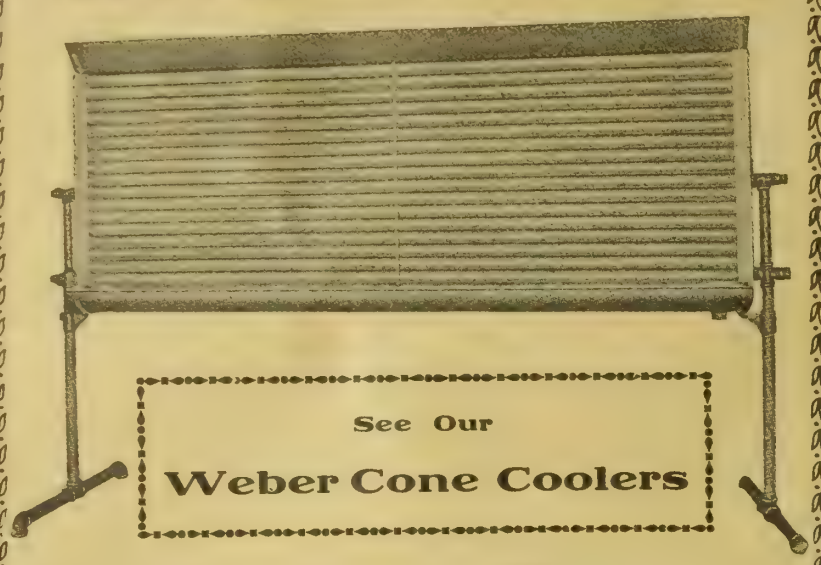

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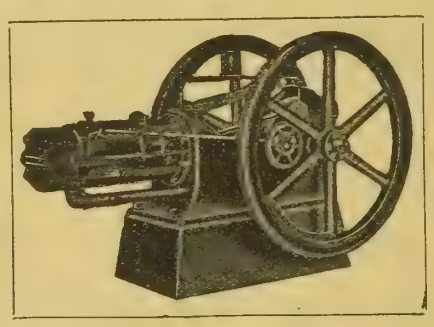

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FILLING THE SILO.

By W. J. Kennedy, of the Iowa Agricultural Experiment Station.

The problem of filling the silo for the first time is going to confront more farmers this year than ever before. Thousands of men are asking these questions: When should the corn be cut? What length should the corn be cut? Should the silo be packed rapidly or slowly? How should the corn be distributed and packed? Should water be added during the filling? How should the cracks or other air spaces be filled? What is the best way to prevent waste on the top of the silo? What does it cost per ton to fill the silo? How soon after filling is the silage fit to use?

In attempting to answer some of these questions the author, in addition to drawing upon his own personal experience of many years with silos, has consulted all of the leading experiment station workers who have had silo experience, and in addition many of the leading beef producers and dairymen. The answers brought out many points of interest. Chief among them was a marked tendency on the part of the beef producers to advocate a more mature corn at filling time than in the case of the dairymen.

Time to Cut Corn for Silo.

While there is some slight difference of opinion on this matter, practically every answer indicated that the corn should be dented, in the dough stage, or when about one-fourth the husks and the lower leaves are turning brown in color. This would indicate that the best results are obtained when the corn is mature enough to cut for shocking purposes. The nearer the corn is to maturity the more food nutrients it contains. Thus the more valuable from a silage standpoint, providing there is enough moisture to insure proper fermentation. Immature corn makes a dark colored, sour silage which may cause animals to scour badly.

Length of Cut to Use.

In the discussion of the lengths in which the corn should be cut when put into the silo, much difference of opinion was manifested. Some advocate one and one-quarter inches, others one inch, others three-quarters inch, many one-half inch, while some advocated less than one-half inch. The longer the cut used the more economical from the standpoint of power and the more rapid the filling of the silo. The shorter cut, such as the half inch length, insures less waste in feeding the silage and makes it possible to put a greater quantity of corn in the silo. Taking everything into consideration, either the half inch or the three-quarter inch cut should be used. This will make a very palatable form of silage for the animal, and also make it easier to pack the silage so as to eliminate the air, thus preventing waste.

Rapid or Slow Filling.

This is a point on which there is much difference of opinion. Where slow filling is practiced it is always possible to pack the silage thoroughly by tramping and allowing it to settle. In this way the full capacity of the silo may be utilized. The objections to this system are that where a large quantity of silage is to be put up on a farm or on several farms with the one filling outfit, it takes so much time that some of the corn must be put in too green at the beginning and some more of it too dry at the finish. It is also more expensive than where rapid filling is practiced.

Where rapid filling is practiced, say from 80 to 100 tons per day, the cost of filling is reduced to the minimum. A large quantity of corn can be put in the silo in a short time, thus insuring a more uniform quality of silage. The chief objection to this method is, unless provision is made for refilling in about a week or ten days time, that after the corn is through settling in the silo it will only be about two-thirds full. This may be partially overcome on a farm where two or more silos are built side by side by filling one for a day, then the other a day, allowing some time for the corn to settle, until the two or more silos are filled. In some instances, where about three days are required for the filling, the work is commenced on Friday and Saturday, allowing the corn to settle over Sunday, and the work is finished on Monday. Where fast filling is practiced the only way to utilize the full capacity of the silo is to fill to the top, let it settle for a week or ten days, remove the waste on the top of the silo, then refill. This requires a resetting of the machinery when used by more than one farmer, but it will pay.

Distributing and Packing Corn.

There are several different ways for distributing and packing the corn in the silo. The principal points to be observed are that the light and heavy portions of the corn should be uniformly distributed. That is, the stalks and ears should not be in the center or at one side and the lighter portions, such as the leaves, at the other side. The corn should be uniformly packed or tramped in all parts of the silo. This is necessary to insure a good quality of silage. The majority of the silo owners prefer having the surface of the silage saucer shaped, about two feet higher at the sides than in the center, for the reason that the center, where the corn drops and the men usually stand, gets solid and hard and does not settle afterward as much as the sides. (This is especially true of those silos filled without some form of a distributing device.) If the sides are constantly kept about two feet higher than the center and well trod or tramped when the silo is full, the silage is wedged tightly against the sides and the heat of fermentation retained, thus killing the germs of mold. One reason why silage molds more at the sides than in the center is that it is not packed closely enough against the sides to prevent the air from reaching the heated silage, thus furnishing mold making conditions.

There are several patented distributing devices on the market. The majority of these are very helpful in filling the silo. A very simple and cheap device may be made by sewing t[o]gether a number of sacks (with t[he]

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ends cut out), making a tube. This is attached to the end of the blow pipe and manipulated by a man inside of the silo. In this way the corn can be evenly distributed over the entire surface of the silo. The packing of the corn is an important point. True, in time it will settle of its own accord, but more corn can be put in a silo and much better silage made when the packing is given careful attention. Tramping on the part of the men is helpful. The best way, however, is to use two good reliable men with cement tampers. The best silage the writer has ever seen was in a silo which had been packed by cement tampers. There was not a particle of waste after a few inches on the top had been removed.

(Concluded Next Week.)

Veterinary

Answers in this column by Fred G. Matthews, M. S., D. V. M., 1232 Central Ave., Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Self Milker.

I have a valuable Jersey cow which sucks herself. Is there any remedy? —Subscriber, Visalia.

Medicinal applications, even of the bitterest kind, to the teats, seem to be of no permanent value. A pole extending from a band around the body to the halter may be tried.—F. G. M.

In addition, we give the following from an article by Mrs. Sherman in the Cultivator of October 28, 1909:

"The next thing tried was a corslet of staves around Bossy's neck. These staves were taken from a small barrel and had a short staple driven in near each end on the upper side. The square corners were rounded off and then a heavy malleable iron wire was passed through the staples. The whole affair was carefully fitted, and then the staples were driven home on the wire and carefully clinched on the under side. The ends of the wire were turned into rings, and a hame strap used to buckle the affair around the neck. This worked on all except one cow, and she learned to get half over on her back and twist over so that she could get to half her udder. She caught herself when down one day and nearly died before released. A self milking cow is nearly always on one's mind. You wonder how she is each morning, whether dead or alive. The common device of putting a seatless chair over the cow's head I notice on a cow between here and town, but modern chairs are not put together with strength enough to make this arrangement lasting. This same cow had another cow put in the corral with her, and she was nursing her the other day. Evidently she is a milk lover.

"The foreigners here split the cow's tongue to prevent self milking. This is good in that it stops the habit, but it is bad because in many instances the cow loses the power of rolling over the cud. I have seen an arrangement of two sticks with a surcingle. The two sticks came up on each side of the cow's shoulders and were fastened to the cheek straps of the halter. The other ends of the sticks were secured to a surcingle around the cow's body. These work well enough in most cases and are a modification of the usual plan. The standard form seems to be the halter on the head with the surcingle around the body, with the broomstick swinging between the front legs. The end of the stick at the halter is given enough swing on a short strap not to bind on the breast. In some cases it is necessary to give as much play at the other end. This, however, must be regulated by the individual to fit the cow. None of these devices are perfect, none of them will overcome the difficulty absolutely. There are some cows that will find a way to get the milk, no matter what happens. The way out of the trouble is not to keep the cow, but send her to the butcher as quickly as possible. I know where there is only one cow and she is bought cheap because of this vice, people will keep her. They should, however, be willing to let the cow beat them sometimes, if it is all considered in a day's work. The trouble is that we Americans do not take the foreigner's view of things. An old Swede living down the road a little piece has a self milking cow. He was standing looking at her, and said to me: 'She is mean to take her milk. I am mean to put that ring with nails in it around her nose and that stick between her legs. Two mean things together, each trying to beat the other. Well, we will not worry about it, for when she gets meaner than I am I can have her head cut off and still get thirty dollars out of her.' I thought he was right. Why worry when he was master at least of the cow's fate?"

Sugar-Beet-Pulp takes the place of green grass and is the best butter producer in the world. 50 cents per ton at Los Alamitos Sugar Factory.

Cough.

The past six months my cow has been troubled with a hard cough. There is no discharge from the nose, and the cow otherwise is in good general condition, giving a full flow of milk, and improving in flesh. Should we use the milk?—Subscriber, Gridley.

Considering the fact that the cow has remained apparently well while the cough has persisted six months justifies a belief in a benign cause. However, this does not occlude all possibility of a disease of an infectious nature. Tuberculosis, if suspected, may be eliminated by the tuberculin test. I would not discard the milk because of a cough alarm.—F. G. M.

Constipation.

My young sow is ailing. She was fed freely upon small white potatoes, but, refusing this, I changed to corn, and now she eats and drinks very little. Observing constipation, I resorted to warm water injections, which brought away some hard mucous covered feces. From the beginning she seemed weak in her hind legs.—Subscriber, Orange.

Provide comfortable quarters where the pig can have shade during the day and be protected from the cold at night. Feed sparingly upon select kitchen slops, surplus milk or ground foods. Give two large tablespoonfuls of Epsom salts as a laxative, but continue the injections if necessary. Mix powdered wood charcoal, Glauber salts, hyposulphide of soda, table salt and sulphur, equal parts, and give a large teaspoonful once a day to a hog of 100 pounds weight. In case other pigs are similarly afflicted, report to this department for further advice.—F. G. M.

Wart.

A young mare has something like a wart on her left flank. However, it seems rather soft for a wart, and, at times, blood oozes from it.—Subscriber, Ione.

Rub powdered bichloride of mercury into the raw surface of the tumor every four days. When certain all diseased tissue has been removed, discontinue treatment and allow the wound to heal.—F. G. M.

Sore Mouth.

A cow four months old has fever sores in her mouth. She cannot eat solid food, dry or green, but does eat bran. There was rapid loss of flesh the first three days of the sickness. Also three young heifers, in the best of condition, became stiff in their legs the same night. Their feet seem to be sore, eyes red, and not able to eat well.—Subscriber, Ione.

The rapid loss of flesh in the cow, followed by ulcers in the mouth, indicates a febrile disease, and in all probability the same ailment is apearing in the younger cattle, but involving the feet first. Some infecting agent is evident, possibly the microbe of mycotic stomatitis. Avoid coarse feeding stuffs and hays containing beards. If the feet become sore, keep the patient out of pastures to prevent the brush and grass from irritating the sores. Use a one per cent solution of permanganate of potash, applied daily with a swab to the ulcers in the mouth and upon the feet. Mycotic stomatitis runs its course in about two weeks, usually ending in recovery.—F. G. M.

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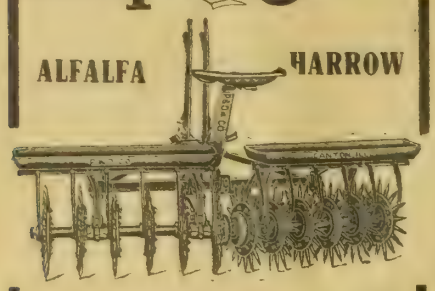

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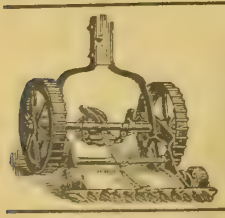

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General Agriculture

INTERNATIONAL CONGRESS OF PLANT BREEDERS.

By G. P. Rixford.

The fifth international conference of plant breeders will be held in Paris from September 18th to 23rd. California is preeminently a horticultural state and is vitally interested in everything that makes for progress in every department of the great field of agriculture and ought to be represented at this important meeting. It is said that there are a thousand men and women plant breeders in America, and those in California actively engaged in creating new plants are numbered by scores at least, the most eminent of whom is Luther Burbank. A congress of these scientific horticulturists in this country would be a crowning epoch in agricultural development.

The official title of the congress is tne "Quatrieme Conference Internationale de Genetique." Phillippe L. de Vilmorin, 66 Rue Boissiere, is the secretary and is much interested in making this meeting a success. He is a distinguished plant breeder himself and is giving much attention to the subject at the magnificent properties of the Vilmorin-Andrieux et Cie. at Verriers. The membership fee for those who wish to attend the meeting and go on the excursions is 25 francs and for those who do not expect to attend the meetings, 15 francs, which will entitle them to receive the printed proceedings, which will contain articles in English, French and German on matters of much interest to plant breeders.

It is hoped that California horticulturists will give their support to this very important meeting, either by attending in person or at least by sending their names and membership fee to the secretary and by lending their influence to secure the seventh session of the congress for San Francisco in 1915. The attention of the officers of the Panama-Pacific International Exposition has already been called to the importance of securing the conference for this city during the great fair. They will give it their enthusiastic support and President Moore will send an invitation to the congress inviting it to meet here in 1915. It is understood that the next meeting has been promised to some European country, but the second meeting is still open and it is thought that the chances are good, if energetic efforts are made to secure the meeting for San Francisco.

If any Californian has a horticultural friend in Europe, let him be urged to attend the conference and make every effort to draw the seventh meeting to this city. It is hoped that Mr. Walter T. Swingle, chief of the office of crop physiology and breeding investigations of the U. S. department of agriculture, may attend the meeting in Paris and carry the invitation from President Moore, and if he is unable to do so, Raphael Weill, now in Paris, will be asked to attend. It is of course too late for the plant breeders of the state to act as a body, but they can individually use their influence to draw the meeting in this direction. Let all who take an interest in the proposed conference send their addresses to the undersigned, who will record them in order that they may be kept advised on matters of interest in this connection and be called together to effect an organization if found necessary or advisable.—G. P. Rixford, 1813 Pierce Street, San Francisco.

FOREIGN CROPS.

The department of agriculture issues the following statement respecting foreign crop prospects about August 1:

Cereal harvest was in progress during July over a great part of the northern hemisphere and, excepting in one or two important producing countries, the results do not seem to be varying materially from earlier anticipations. In western Canada spring wheat prospects appear to have maintained their excellent promise in Saskatchewan and Alberta, but black rust is recently reported, though not officially confirmed, in Manitoba. The condition of spring wheat at the end of July was put at 90 for the whole of Canada against 77 last year, the range in the three western provinces being from 90 to 96 this season as compared with one of from 56 to 68 a year ago. The total yield of winter wheat is estimated by the Dominion department of agriculture at 17,706,000 bushels compared with 16,610,000 in 1910. The largest crop of wheat ever grown in the three western provinces was 147 million bushels in 1909; almost 2¾ million acres have since been added to their wheat area, and until recently a round 200 million bushels was the favorite trade estimate for the present year.

Cereal harvest in Europe had at the beginning of August reached the latitudes of the British Isles. In the West it was from one to three weeks early, in the center about normal, and in the East from two to three weeks late. From the present somewhat vague indications the total European wheat crop is not likely to equal that of last year.

In western Europe as a whole the prospects are for average, or possibly better than average yields; in the United Kingdom and France quantitative estimates are not yet available, but the trend of popular opinion is toward confidence in about an average outturn of wheat of excellent quality, with crops of rye, and especially oats quantitatively not quite up to that standard. Spain and Italy have each announced banner crops of wheat; the former reports 157 million bushels against 137 million in 1910 and a former record yield of 144 million bushels in 1909; the latter estimates the current crop at 197 million bushels against 153 million a year ago and 190 million in 1909.

In central Europe cereal yields, owing to favorable weather, will probably be better than at one time anticipated. In Belgium wheat promises better than last year. In Germany and Austria, however, neither wheat nor rye promise quite so well as in 1910, and in the first-named country the outlook for oats is very discouraging; wheat in Hungary has greatly improved and promises to surpass the 169 million bushel crop of last year; the barley and oats crops are also officially rated as quantitatively superior to a year ago, but rye is this season deficient. Unofficial estimates of the Roumanian wheat crop make it smaller than in 1910 but above the average, while prospects in the other Balkan states seem generally favorable.

The agricultural situation in Russia seems during August to have been greatly modified. Prolonged drought in western Siberia and in the eastern

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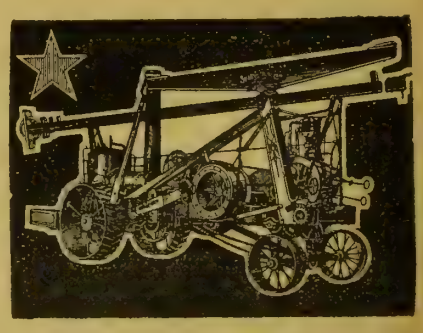

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provinces of European Russia, including the important spring wheat producers, Samara and Orenburg, is reported to have resulted in great losses. The two provinces combined ordinarily produce about 120 million bushels. No quantitative official expression of the results of the calamity have yet appeared but it may be of interest to note that trade estimates of the total Russian crop are being reduced 150 million to 200 million bushels. The actual extent of the damage, however, must necessarily be in doubt until the issuance of the official figures.

In Argentina and Chili, where autumn-sown crops are now passing through the mild winters of those latitudes, weather conditions have been reported favorable, and hopes, based on the present appearance of the fields, are for good yields four months hence of wheat, oats and flaxseed.

The progress of the monsoon in British India has not been satisfactory but has lately improved. Much anxiety has been expressed respecting the seeding of crops, but it is believed that good rains would yet save the situation. The crops jeopardized are those harvested in autumn, commonly known as the food-grain crops. Wheat and flaxseed are sown between September and December, but a failure of food grains would likely have an indirect influence on the export of wheat.

PLANTING AHUACATE SEEDS.

By Dr. F. Franceschi, Santa Barbara.

Plant them as soon as received. They will retain their vitality only for a short time.

Redwood sawdust mixed with one-fourth clean sand will make the best rooting material. If this is not available, sifted leaf mold with sand will do, or any other material which will be porous and will allow free expansion of the roots. Manure should be avoided; it may cause decay of the young roots.

Boxes about six inches deep should be used; if too deep, more difficulty will be found in transplanting.

In whatever season the seeds are planted, it should be done under some shelter; either under glass, under cloth, or in the house; in order to insure an even temperature and a more uniform degree of moisture.

Seeds should be planted one inch apart, with their pointed end standing a little above the ground. Boxes must be kept moist, but they must have good drainage.

Within three to five weeks germination will take place, the roots plunging downwards from the base of the seed, while the two sections of same will be split open by the fast growing plantlet. Sometimes two or more sprouts will emerge from one seed; only the strongest should be left, except when found that each one has developed an independent system of roots.

When the seedlings will have developed four to six leaves, it will be the right time to transplant them, before the roots grow too long and too much crowded in the boxes. This can be done either in pots, boxes or cans, always employing good garden soil.

Three to four months after having been potted, the seedlings should have grown strong enough for transplanting in the open ground, where they are sure to grow well under ordinary care. When about one year old they will be ready for budding or grafting.

The Citrus Fruit Association at Fillmore, Ventura County, will build a new lemon packing house.

PARCELS POST DOINGS IN SOUTH AMERICA.

By Edward Berwick, President Postal Progress League of California.

Delegates representing the governments of the Argentine Republic, Bolivia, Brazil, Colombia, Chili, Ecuador, Paraguay, Peru, Uruguay and Venezuela, foregathered early this year in Montevideo, and founded the South American Postal Union. Among other measures they established a parcels post for parcels up to 22 pounds (10 kilogrammes), size not to exceed 216 cubic decimeters for land transport, or 50 for sea transport.

The charge for parcels up to 2 1-5 pounds (1 kilogramme) is made up of as many times 5 cents (25 centimes) as there are administrations participating in the land conveyance, with, if need be, half the sea charges fixed by paragraph 2 of article 3 of the convention of Rome; but the charge due to any administration whose services take part in the sea transport may, however, in no case exceed 10 cents for parcels of 2 1-5 pounds, irrespective of distance. This may be raised to 15 cents for parcels up to 11 pounds and 20 cents for those up to 22 pounds weight. So that a parcel of 22 pounds can travel over the wide area of Brazil to any part of Argentina for 40 cents. This is almost the whole length of South America.

And citizens of the United States still are paying 64 cents for sending parcels of four pounds to the nearest village!

Surely what the Latin races of South America can do is within the bounds of possibility of achievement for the composite cosmopolitan races of the United States!

If not, why not?

FLAX WILT.

Flax wilt is caused by a mold-like fungus. The fungus threads attack the young seedling, and may either kill it outright or merely stunt its growth. The fungus may live for a number of years in the soil, on old flax straw, or on other decomposing material. It is for this reason that flax should not be grown on the same land more than once every five to seven years. The disease may also be carried on the seed. The reproductive bodies (spores) are scattered over the seed at harvest time, and remain there during the winter. In the spring, even though the flax be sown on unaffected land, the spores on the seed will germinate and infect the flax plants. There may be then two sources of infection, viz., the soil and the seed. Danger of infection from the first rotation, and from the second, by seed treatment.

Seed flax should first be very thoroughly fanned, in order to get rid of all light seeds, chaff, pieces of straw, etc. Then it should be spread out on a floor or canvas, which has been previously well washed with boiling water or strong formalin solution. Spray the seed with formalin, used at the rate of 1 pound to 40 gallons of water. It is necessary to use a compressed air sprayer, which will throw a fine, misty spray. While one man rakes or shovels the grain over, another should apply the spray, being sure to moisten every seed, without using too much of the liquid. The flax should then be covered for a couple of hours with sacking or canvas previously cleaned. It should be shoveled over, and may then be sown.

If the seed is carefully treated, and sown on land which has not grown flax for 5 to 7 years, there should be no wilt. It is important to remember that untreated seed, grown on clean land, may produce a wilt-affected crop; and, in the same way, treated seed sown on unclean land may produce a diseased crop. Therefore, great care should always be taken to get clean seed and sow it on clean land.—E. C. Stakman, Minnesota University Farm.

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THE GRAVENSTEIN.

One of the best of early fall apples, and some say the very finest apple grown, is the Gravenstein. It is an old time favorite, of German origin, yet not widely known, because it is a very exacting apple, and will not smile, rather it will not take on its most becoming blush, excepting under most favorable circumstances. There is one section of this state in which the conditions all seem to be met, and a perfect apple is the result.

It is often remarked that Californa may grow oranges, or prunes, or raissins, or flowers, superior to any section in the world, but she can't produce apples with the East. Now we wish to go on record. No section of the East, nor of the world, ever produced an apple superior to the best of Sonoma County's Gravensteins or Pajaro Valley's Bellflowers, or the Delicious, the Spitzenberg, or others adapted to the conditions of some favored sections of the foothills of the Sierra Nevada.

The Gravenstein has been proved out for more than a hundred years in this state and has made good. There were apples at the Sebastopol show last week which were grown on a tree said to have been planted more than one hundred years ago by the Russians who colonized a section along the Russian River in Sonoma County. This long test, together with satisfactory returns, should impel those who have similar conditions to plant the Gravenstein. It's one of the earliest apples in the market—the earliest of the highest quality — and a good keeper.

But the main point is, adapt your productions to your conditions. Burbank says the Gravenstein will not grow to perfection in the hot interior valleys. Neither will the date, the raisin, the early cantaloupe, grow to perfection under coast influences. Excepting for experimental purposes, planters should use greatest care in selection of crops which require years before their success or failure may be learned.

But regarding the Gravenstein, and the great show of last week at Sebastopol, more will be given in editorial correspondence in a later Cultivator.

On another page of this issue we print official list of apple awards.

WILEY AND PURE FOOD.

Apparently Dr. Wiley and his superior, Secretary Wilson, are endeavoring to get the strangle hold on each other. The situation is becoming so strenuous that Secretary Wilson has threatened to resign. Wiley's inclination does not seem to tend in that direction. So far as can be judged by the tone of the press the c untry over, Wiley has the greater part of the people behind him in the feeling that he stands between the consumer and the meat and other trusts which would feed the people on "vitrified beef" and things.

Californians as a rule have no particular love for Dr. Wiley, because of his bullheadedness in the sulphured fruit ruling. This trait of Wiley's of not listening to reason, but forcing his way through without regard to rhyme or reason, will ultimately lead to his removal, but so far it is undeniable that he has the support of a vast number. This support will be strengthened by the aparent combination of the trusts on the merest technicality to oust him from office. That was a serious mistake, and a more reasonable charge should have been trumped up.

We maintain that a fairly good indication of the Eastern estimate of Dr. Wiley is given by Walt Mason:

"You can't speak too highly of good old Doc Wiley, the government chemist, our bulwark and hope, protecting our bellies from ketchups and jellies and all sorts of things which are loaded with dope. He's death to the faker; he chases the maker of fraudulent remedies, labeled with lies; he seizes the butter too rancid to utter, and puts the kibosh on the poisonous pies."

An Eastern exchange, the Journal of Agriculture, gives the following as its estimate of Dr. Wiley's work:

"Dr. Wiley has been a somewhat fussy person in office. He must have impressed many people with being overofficious. He has seemed at times to court the limelight more than the laboratory. He has rushed into places where angels fear to tread, and has in this way somewhat shaken public confidence in his personal judgment, if not in his professional and official capacity. After all of this is noted, however, it remains to be said that there is nothing more deceptive than mere superficial appearance of things. Men as fantastic and bizarre as Dr. Wiley are often found to be masters of their calling, and moved by an earnest desire for the doing of good. This may be true of Dr. Wiley. But even this should not save him if he can be shown to have grown bumptious to the extent of assuming that he is above the law and above the people whose interests as taxpayers the law was made to serve."

THE APPLE.

North America is the leading apple producing section of the world. The United States and Canada produce an average of about 100,000,000 barrels annually. The greatest and most profitable apple region of this country, considering productiveness, quality, long keeping of fruit and longevity of tree, is that which begins with Nova Scotia and extends to the southern end of Lake Michigan. Other important regions include small sections of Virginia, portions of the Ozark Mountains, the adjacent Arkansas section, the foothills and coast valleys of California, and northward to the valleys of Oregon and Washington. The apple grows and does well in all parts of the United States north of Florida and immediate Gulf borders.

The apple was introduced into this country very early, when it was prized chiefly for its cider, and the common notion as to a cider producer was that "anything would answer." This perhaps accounts for its common neglect. In nearly all the Eastern apple producing sections the apple orchard is merely an annex to the other features of the farm. If the tree lives, good; if not, no harm has been done. More lately intensive culture has been given, and the apple is being restored to its proper place. California apple producing possibilities have never been fully appreciated. It is common, even with older residents, to refer to the lusciousness of our peach apricot, grape and orange, and to end up with the expression, "California cannot produce the apples of the East," but with fullest understanding of apple requirements, and by planting those varieties which will do well in the particular section chosen, the apple will come to its own, and all will ultimately realize, as a few do now, that California's apple growing future has great promise.

The Iowa state college has started short courses in hog specials, corn specials, and other subjects in addition to the usual classes conducted along general stock lines, poultry, etc. Soils, cookery, sewing, sanitation, decoration, and many other subjects come in for special attention. Connected with it, as with the California courses, is a rural life conference.

IMPORTS INCREASED.

The importer would be glad to show a decrease in quantity of lemons imported under the cent and a half duty per pound, but unfortunately for him he is unable to make any such showing. As a matter of fact importations of lemons increased about 25,000,000 pounds during the year immediately following the passage of the Payne-Aldrich act over importations of the year preceding. To give more explicit information, we may say that the receipt of foreign lemons at the port of New York in June 1909 was 238,500 boxes; in June 1910, 307,000 boxes; June 1911, 359,000 boxes; July 1 to 28, 1910, 265,920 boxes; between same dates this year, 387,525 boxes.

Here then the importer must fall back upon the other claim that "the widows, orphans and poverty stricken" have been compelled to pay an excessive price for lemons. But Mr. Powell's investigations in Europe have developed the fact that the European in free trade countries is paying practically the same as the American consumer. There is such an amount of juggling with the markets that a certain profit has to be secured for all hands. Under the cent and a half tariff California methods of co-operative marketing have put the fruit into the hands of the consumer at prices which have been entirely satisfactory to him, but of course the "widows and orphans" argument sounds good to the importer, and he is using it to the limit.

CALIFORNIA AS A LEMON PRODUCER.

The last two years has witnessed the planting of 3,380 acres of lemons in California. These plantings are distributed approximately as follows: Los Angeles County, 1,200 acres; Ventura County, 1,000 acres; Riverside County, 500 acres; Orange County, 250 acres; Tulare County, 200 acres; San Diego, 100 acres; Santa Barbara County, 30 acres; total, 2,180 acres.

Plantings estimated for next year, providing there is no serious disturbance of the tariff, comprise 5,150 acres. It is also estimated, in addition to these plantings and the bearing orchards, that there are 56,000 acres capable of producing lemons. Yet the importer is saying: "What is the use of protecting an industry which has no possibility of ever supplying the needs of this country?" Granted a fighting chance, California can supply all the lemons needed on this continent.

Secure the full amount of humus from manure or green crops plowed under by keeping beneath the surface. Manure thrown on the top of the soil and allowed to dry there and be cultivated about these hot days loses in dry oxidation and does not form humus. If it is under the soil in contact with moisture, more beneficial results are obtained. While soils in California are poorer in humus than those of the humid East, the humus, on the other hand, is much richer in nitrogen.

Southerners refer to cotton growing as "making" cotton. An acre will "make" so much, and it requires "15 acres to the mule." Of all the cotton produced in the world America furnishes four-fifths. India, Egypt and Africa are all factors, but small ones, and the demand for cotton increases every year. Prices for the past decade are much higher than any preceding ten years. The South will "make" this year about 31,004,000 acres.

Agricultural News Notes of the Pacific Coast

Northern California

Many new wells are being put in in Tehama County.

Mendocino County claims a future as a peach grower.

A big potato crop is being loaded onto the Sacramento River steamers.

Lassen County claims this year a hay crop of exceptional quality and large yield.

The University Farm at Davis has added some pure bred cattle and hogs to its stock farm.

The price of hops has soared above the 40 cent mark and shows no indication yet of coming down.

A successor to the Sutter Produce Company will take care of packing and shipping Yuba City's grapes.

Horticultural Commissioner Mills of Butte County reports that the olive knot has been practically eliminated.

Tehama County is producing extensively of tomatoes. Some growers are reported to have netted $700 from a single acre.

Fruit shipping at Winters, Yolo County, has slacked off and there will be little doing until the grape shipments start.

The new alfalfa meal mill at Gerber, Tehama County, is producing 1,200 sacks of meal a day.

Beet fields about Woodland, Yolo County, are shipping ninety tons of beets daily to the factory at Hamilton.

Omaha capitalists have organized a $20,000 company for the purpose of engaging in fig culture in Butte County.

Oswald, Sutter County, is sending out carload shipments of Thompson Seedless Grapes to Washington and Oregon.

Williams, Colusa County, expects to become in the next few years one of the leading poultry raising centers in the northern end of the state.

Japanese who have been leasing some of the best orchards in Placer County are organizing a Japanese Protective Union, and will build packing houses for the handling of their own fruit.

The plans for Butte County Drainage District No. 1, 6,000 acres between Gridley and Feather River, are now practically complete. The cost of the system is estimated at from $35,000 to $40,000.

There are 400 people employed in the orchards of Butte County in gathering and packing deciduous fruits. Every box of fruit leaving Chico carries beside the name of the shipper the name of the town from which it is sent.

Hop picking will begin in Sonoma County next week. Hop picking machines will be used on many of the ranches. One of these machines picks between 40,000 and 50,000 pounds a day, at a saving of from 50 to 65 cents per hundred pounds over hand labor.

A ton of Hawaiian fruit seeking entrance to San Francisco was found infested with the Mediterranean fruit fly by Quarantine Officer Bremner and the entire consignment was dumped into the bay after being boiled an hour to insure the death of any of the pests.

Central California

Laton, Fresno County, ships out six tons of butter every week.

Inexhaustible wells have been tested this season at Fort Romie, Monterey County.

Barley growers of the San Joaquin are making big money on this season's crop.

Prizes aggregating $2,500 will be awarded this year at the Watsonville apple annual.

This August is reported to be the coolest that the San Joaquin Valley has experienced in five years.

The State Creamery Operators Association will hold a week's session in San Luis Obispo in November.

Morocojo and Moss Landing in Monterey County are busy with threshing work and show a big yield of barley.

The Commercial Association at Kerman, Fresno County, is urging strenuous action for eradication of Johnson grass.

H. A. Sessions, of Vinland, has been appointed Director of Farmers Institutes in the San Joaquin Valley.

Aromas, San Benito County, has shipped since May 6 nearly 100 carloads of berries. The season will be extended over another month.

The Pajaro Valley Poultry Association is making enthusiastic plans for its state poultry show to be held during apple annual week, October 11-14.

The Santa Clara County Grape Growers Association held a meeting last week which was addressed by Secretary Stoll of the State Association.

Raisin grape growers are earnestly hoping for a few weeks of good hot weather to hasten ripening, so that harvest may not be delayed until danger of early rains.

Work has begun on the Stanislaus River dam, which when completed will supply water to more than 70,000 acres of land in the southeastern part of San Joaquin County.

Bee men of Kings County are complaining that the honey output will be short because of cool weather. About twenty cars of honey were shipped last year from Kings County.

Another Fruit Growers organization is being perfected at Kerman, Fresno County. The President of the new organization is D. I. Englund; the Secretary is Axel Kap and Manager B. A. Larsen.

Horticultural Commissioner Volck of Santa Cruz County calls attention in his monthly report to the large amount of first class orchard land yet undeveloped in the mountain sections of Santa Cruz County.

The State Board of Fish and Game Commissioners is promoting the formation of a protective fish and game association in each county of the state, so as to bring its work in closer touch with the actual needs and desires of the people.

The directors of the Watsonville apple annual wish it to be known that the coming show is to be called the California Apple Show. They wish it understood that it is not a local show, but for the exploitation of all sections of California which grow aples of good quality.

Southern California

San Diego's newest industry is the raising of French snails.

A total acreage of 5,000 acres of beans is ready for harvest on the great Santa Margarita Ranch.

Antelope Valley cattle growers are shipping their stock to the sugar beet fields to fatten on the tops.

Santa Barbara County livestock inspector reports that county entirely free from Texas fever ticks.

Walnut gathering will begin about two weeks earlier than last year is the report from Ventura County.

The San Diego County Fair will be held at Escondido Sept. 6-9. Grape Day celebration falls upon the 9th.

One grower at Camarillo, Ventura County, has sixty tons of dried cots on hand, for which he has refused 14½ cents.

Riversiders hear with sincere regret of the resignation of Tree Warden Reed, who has given the city miles of well shaded streets.

Cutting of black eyes, Limas and pinks is beginning in Ventura County. The crop of black eyes alone is estimated at 75,000 bags.

The exhibit committee of Grape Day celebration at Escondido on Sept. 9 offers $125 in prizes for best displays of fruit and vegetables.

Twenty-three concerns in Southern California are to be prosecuted for violation of the pure food law by direction of the State Board of Health.

Cotton growers of Calexico are looking to the Mexican laborers now at work in the beet fields of Southern California for their extra cotton pickers.

Ventura County's grain crop has all been harvested. The average production has been exceptionally good this year, some places growing 27 sacks per acre.

Residents of Sierra Madre, Los Angeles County, held a meeting last week to decide upon the best plan for cleaning up the pepper trees along its streets.

The supervisors of Los Angeles County have inspected the territory it is proposed to incorporate into a storm water district to control the floods of the San Gabriel.

Escondido, San Diego County, has not claimed to be a great citrus fruit producing section, but this year has sent out 90 cars of oranges which did not include Valencias now going forward.

The Calexico Farmers and Merchants Club is actively promoting the interests of town and country, good roads, cultivation of sugar beets, sugar cane, building operations, water systems.

The nursery which the Forestry Department has maintained in Lytle Creek Canyon will be able to meet the demand for forest trees to be planted on the great burned over area in the San Bernardino Mountains.

Active work is to be commenced about Sept. 1 on the damming of the Colorado about forty miles north of Needles as a part of the great irrigation project which will water over 300,000 acres of land in Chucawalla Valley and Palo Verde Mesa.

The Coast

Toppenish, Washington, is shipping out thirty-five carloads of hay per day.

Offers of 45 cents a pound for hops have been turned down by Oregon growers.

A bee farm in active operation will be one of the features at the second annual Clark County Show.

So little rain has fallen on the ranges in Southern Arizona that stockmen are much discouraged over prospects.

Wenatchee, Washington, is shipping out carloads of green deciduous fruit. Peaches so far form the bulk of the shipment.

The bean crop near Yuma, Arizona, is averaging about a thousand pounds to the acre, much lighter than preceding years.

Thousands of conifers and eucalypts are being set out on experimental plots in forest reserves of the Hawaiian Islands.

Two parties of government surveyors are at work in Washoe County, Nevada, preliminary to future irrigation development.

The sugar beet output of Union and Waliowa Counties in Oregon is estimated to run from 15,000 to 20,000 tons this season. Slicing will begin late in September.

The Cohasset Fruit Growers Union has decided to hold a fruit and vegetable fair early in October, at which will be exhibited specimens of orchard and garden products.

Poultry raisers of Klamath Falls, Oregon, are interested in the formation of a county association which will bring the poultry raisers together the latter part of September.

Superintendent Ehrhorn of the Division of Entomology, stationed at Honolulu, H. I., announces thorough inter-island inspection between Oahu and the other islands of the group.

Fallon, Nevada, is making great preparation for its county fair to be held next month. A long list of prizes has already been announced for best exhibits of vegetables, fruit and blooded stock.

The small boys of Springfield, Oregon, are expecting to make pocket money during the first of September by stripping cones from the fir trees, to be used by the forestry department in seeding.

The fruit growers unions of White Salmon and Underwood, Washington, are planning to consolidate, and it is hoped this may be the first step toward a general union of growers over a large district.

Residents of the Lewiston-Clarkston Valley will have the opportunity of attending a fruit school in Clarkston, Washington, for the purpose of studying horticultural conditions in their own orchards. The school opens in January.

C. S. Sterrett, a marketing expert from Los Angeles, has been making a tour of the Hawaiian Islands in company with Dr. E. B. Wilcox, Director of the Hawaiian Experiment Station. It is hoped that his findings will yield a valuable body of information and advice for the use of the island producers.

Animal Matter a Necessity For Poultry

Experiments at various State Experiment Stations have demonstrated beyond a doubt that Protein derived from an animal source is far superior, as an egg producer and flesh builder, to Protein derived from a vegetable source.

Our High Protein "Special" Beef Scraps Will Supply That Necessity

If your dealer cannot supply you, write us, and we will send you samples and price.

Made in California from fresh Packing House Products. Look for the word "Special" in red ink on every sack.

Western Meat Co., San Francisco, Cal.

Dried Milk for Fowls

Nothing better, especially in hot season; nearly 50% protein. Special prices for short time only:

Harding's, $3.50
Casein Co.'s, $3.50
Bent's, $3.75

5 Sacks 15c and 10 sacks 25c less

WEST COAST SEED HOUSE

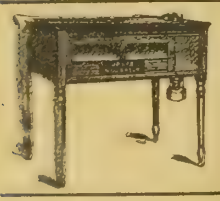
111, 113, 115 WINSTON ST. between 4th and 5th near Main. LOS ANGELES

Catalogs of Everything for Poultry and the Garden

BUY LAYING HENS NOW

PRICES ARE LOWER RIGHT NOW THAN AT ANY OTHER time of the year. If you need hens take our advice and buy them right now. We can supply fine young White Leghorn yearling hens at $8.50 and $9 per dozen. No matter how many you wish, we can supply them at this price right now. These prices are good this month only. In July and August hens are worth more. In September these same hens will be selling at $12 and $15 per dozen. Buy them now and make a big saving. Send today for catalog of prices on baby chicks of all kinds, hens and pullets, etc.

THE PIONEER HATCHERY CO.
112 East 8th Street, Los Angeles



Don't Make a Mistake Remember

There is but one **JUBILEE.** Our customers tell us that there is but one Incubator and that is the **"JUBILEE."**
Let us send you our Catalog. It's free.

JUBILEE INCUBATOR CO., Sunnyvale, Santa Clara Co., Cal

Save Money By Buying This Good Second-Hand Pipe

We can supply you with any size and quantity of Standard Pipe or Casing—all new threads and couplings—all stock guaranteed first-class.
If thinking of buying any kind of pipe, your best interests will be served by writing us for prices and particulars.
PACIFIC PIPE CO., Main and Howard Streets, SAN FRANCISCO.

Profit in the Poultry Yard

Practical poultry people who may have ideas from their experience as to methods of feeding and housing and general care of poultry will confer a favor upon the Cultivator and its circle of readers by sending in concise accounts. Mrs. Basley is always willing to answer queries, which with the experience of others should make this a most valuable feature in poultry life on the Coast. Opinions or matters of a personal nature should be omitted, but a concise statement of facts is always valuable.

CALIFORNIA IDEAL FOR POULTRY.

By Mrs. A. Basley.

Nature, our great instructor, gives plenty of green food at breeding time, shade of trees, animal food, and clear spring water, and if you can duplicate these conditions, which is easily done in this ideal climate, you can hatch chickens in the summer months as well as in the winter, and with less trouble to yourself.

Those that complain that eggs are growing smaller are right. They always grow smaller in the summer everywhere, because the hens are taking on fat preparing for the winter cold and their rest, but here we have no cold and almost no winter, and if the hens are properly fed there is no reason why the eggs should grow smaller or the hens stop laying except for the moult. Eggs grow smaller when the hens have not sufficient succulent green food and not enough animal food or too carbonaceous a diet, that is, too much starch, which is both fattening to the hen and weakening to the embryo.

Show Birds.

The best time to hatch pullets for exhibition is from five to six months prior to the show, according to the breed you are handling. A pullet is at her best just before she lays her first egg. She is then considered to be in prime condition of shape, feather and weight.

My pullets, being bred to lay, commenced laying too early to be in the best condition for the winter shows unless hatched in June or July, or even in August, so I always took pains to have prize winners hatched then, otherwise I had to keep moving them to stop their laying, as well as feeding to prevent it. I know by experience what grand pullets can be hatched in the summer months.

A male bird is called a cockerel until he is a year old, and he is usually in the best condition at nine or ten years of age. At least this is the case in breeds which have a weight clause to the judging. In the smaller breeds they can be younger, and with bantams those hatched late are considered by far the best both in this climate and in the East. Cockerels should not be allowed to mate until a few days before the show. They and the pullets are both in better condition if kept in celibacy.

Hatching in Summer.

Now a word about hatching in summer. It can be done, and done most advantageously, as I have proved by my own experience. The parent birds, however, must be kept in good, vigorous condition, especially the male. Keep the birds free from lice, give them plenty of green food as well as a generous supply of animal food, keep the scratching pen full of good litter, straw, hay, etc., and feed all the grain in that, so they will have to work vigorously for it. This keeps the egg organs and the digestive organs invigorated, and you may be sure of fertile eggs and sturdy chicks.

The reason some people advocate not hatching after May is either because they are getting tired of it, weary of caring for the chickens, it has grown to be an old story and they want a change, or because their market does not warrant it.

Starting a Chicken Ranch.

This brings me to the question, when is the best time to get a chicken ranch? Undoubtedly the summer is the best time to buy a ranch to start in the poultry business. Then houses can be built, yards laid out and everything prepared to commence early in the fall to hatch. In the summer there are good bargains to be had in fowls from breeders who want to sell off their surplus stock in order to make room for their growing pullets and cockerels. The summer is the time when you can make the best beginning, whether you are a novice or an old hand at the business. Another reason for buying soon is that the price of land is advancing rapidly and it is well worth while to take advantage of the lower prices now prevailing.

Choosing Location.

The question as to the best locality is more difficult to answer, so much is involved in it. The first consideration from a money point of view is to get a ranch that is easily accessible to a good market. The best market in Southern California is of course at Los Angeles, where for both fancy and commercial poultry you will do well. In the north or adjacent to San Francisco of course the best market is at San Francisco. The nearer you can get to your market and where the facilities are the best is the place to locate. There are, however, other considerations, and the chief of these is the health of the owner of the ranch or members of his family. Some require sea level or ocean air, others a distance from the sea, and others a greater elevation, so my advice would be to consult a physician before buying. I have heard it said that you cannot raise fowls near the ocean. Curious idea, and entirely untrue! The hen that won the first prize at the last poultry show and the $25 challenge cup at the last show at Inglewood was raised at Manhattan Beach, where the owner is raising about three thousand chicks almost within sound of the ocean waves. Several years ago I visited a beach cottage within reach of the spray at Playa del Rey and there found a small back yard lot, kept beautifully clean, with nice healthy fowls laying eggs as well as anywhere. The owner said that her Buff Orpingtons did not do as well as the Leghorns for her, but I have a month ago brought down to the shore to Venice half a dozen of that breed, and nothing could do better or lay more eggs than they do. The beach here in California is as good as any place for fowls.

In choosing your location the soil should be considered, although this can be remedied artificially by adding to it what it lacks. Still it is of great advantage to get a desirable soil and plenty of good water when you are beginning.

The climate of Southern California is simply ideal for fowls, and, indeed, for any animal, and what may be lacking in the right food or balanced rations can easily be supplied by the owners if they will only take the trouble to do so.

POULTRY HELPS.

The growing of green food is becoming quite popular with many. The ordinary plan is to soak whole oats grains twenty-four hours previous to sowing. The ordinary green house flat is useful for this purpose. Any box from three to four inches deep will answer. It is necessary that the bottom of the box should have sufficient holes to give good drainage. Place a little damp earth over the bottom of the box and then put in about one-half inch of soaked grain, and cover this with about one inch of sand. Keep the earth moist. In a few days the grain will begin to germinate. Most feeders allow the grain to grow to be two or three inches in height before feeding it.

Any of the common advertised coal tar stock dips may be used as sprays for the hen house with satisfactory results. They may be diluted with 50 parts of water. These mixtures may be applied with a large brush or with a spraying machine. A good spraying machine is quicker and more efficient than a brush. Great care must be taken to fill thoroughly every crevice in the wall, perches and nest with the liquid. Two thorough sprayings should be made on the first day. The next day a careful examination should be made and if any mites can be found alive the house should be thoroughly treated again. Although these solutions will kill the adult mites, it is not likely that they will reach the mite eggs and prevent them from hatching. The houses should, therefore, be sprayed twice again at intervals of one week. This will catch any mites that have hatched out from the eggs laid previous to the first spraying.

Never let up on your battle on lice at this time of the year. The writer has made a lice-killing machine out of an old barrel. In this he puts about twenty-five little chicks at a time, and throws a tablespoonful of lice powder over them. Then the barrel is closed air tight and rolled on the ground till it makes eight complete revolutions. The birds are then liberated. This treatment applied once each week for a month will completely destroy every louse.

Too much green bone, meat meal or meat scraps fed the same day will work a great injury to the fowls. In pullets the combs will turn yellow and diarrhoea will sometimes follow. The bird will act drowsy and droopy till it finally dies. The badly diseased birds should be killed at once, and the doubtful ones removed to quarters by themselves where they should be fed grain and clover hay. Have no animal food in the mash. Fill hoppers with bran and grit. An hour before sunset feed a full ration of wheat. Medicine does little good in these cases. If diet will not set these birds right, little else can be done with drugs. In addition to this treatment the birds should have a liberal supply of pulverized charcoal set where they may partake at any time.—Dr. Salmon.

As the turkeys grow give them range. Turkeys do not do well in small and crowded quarters. They can be raised to some extent on a small range, but such specimens generally are stunted in size and are of poor color. If lice appear grease their heads and wing coverts with carbolized vaseline. They will not need much food, but will do better and grow faster than those kept close to the house and fed from five to six times a day.

STATE POULTRY SHOW.

The Pajaro Valley Poultry Association now comes to the front with the announcement of a state poultry show at Watsonville, October 9th, to 14th, during the mammoth state apple show which was such a great success last year.

The Pajaro Valley poultry people are great boosters, as evidenced by a membership in their association of over 190 since last March, at which time they organized. They have secured Judge Geo. D. Holden to officiate at their show, which is ample evidence of the character of their exhibition.

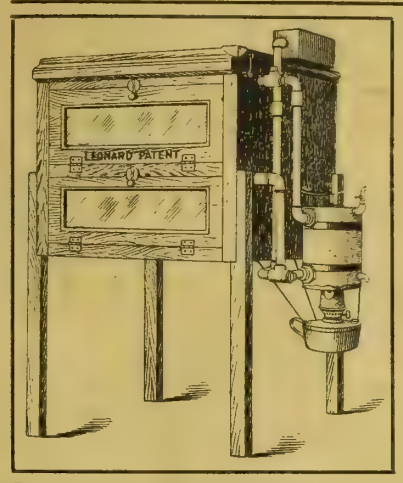
If you are not willing to do the work necessary to keep your poultry free from lice, don't try to raise it. It will not pay you.

Lee's Poultry Products

—are always good and are guaranteed to produce results. Accept no substitute for Lee's Lice Killer, Egg Maker, Germozone and other goods.

The Mandy Lee Incubators and Brooders cannot be equalled.

Geo. H. Lee Co.
225 West Second St.
Los Angeles, Cal.



Economic Incubator

Latest, Safest, Cheapest and Best

First—Because it's the last.

Second — Because it's so simple to operate, nothing to operate, nothing to get out of order.

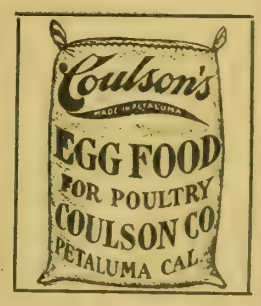
Third—Because it has top and bottom chambers and nurseries, heated by hot water apparatus; direct flow heating upper chamber, return flow heating the bottom, both chambers perfectly regulated automatically with heat and moisture without water pans.

Can be worked single or double. Designed and patented by the maker after years of experience with the defects of other machines.
Our machine occupies only half of the floor space of single chamber machines of the same egg capacity. Write for particulars.

Economic Incubator Co.
1005-7-9 W. Second St. Los Angeles, Cal.

Can You Analyze Egg Food

? ? ?

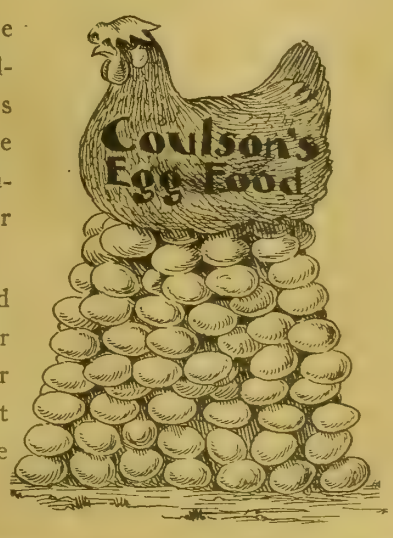


If you can, just take a pound of **COULSON'S EGG FOOD** and make a critical examination for properties contained, completeness of mixing, and egg-building power. Then take any other egg food, and make the same examination. In this way you will know why **COULSON'S EGG FOOD** is so universally used.

The same material purchased by yourself would cost at least a third more than we charge and you could never give it the thorough mixing that it received in our mill. Some of the properties you could not purchase from your dealer at all, but they are essential to successful egg-making and we spare no pains and cost to bring them long distances and incorporate them in the proper proportion into our **EGG FOOD.**

It is economy and wise dealing to secure **COULSON'S EGG FOOD.** The thoughtful poultryman recognizes that he can take no chance. His birds are his living,—his home—his fortune. He must make the most possible out of them. He cannot afford to sacrifice their health or neglect their product.

We meet the demand for the best poultry food on the market. We invite those who have never used our food to give it a trial. You will find it for sale by all reliable poultry supply houses. Insist on being supplied with Coulson's and you will have the best that money can buy or brains produce.



COULSON POULTRY and STOCK FOOD CO.

Petaluma, Cal.

Germain Seed and Plant Company, Los Angeles, Distributors for Southern California.

SAVE MONEY
ON YOUR POULTRY SUPPLIES

Every price quotation here given is positively the lowest for which dependable qualities can possibly be sold.

Thousands of ranchers and poultry raisers concentrate every purchase here because of the great saving in the cost of everything they need.

WE ALSO FEATURE OTHER FAMOUS STAYCO PREPARATIONS FOR VARIOUS USES.

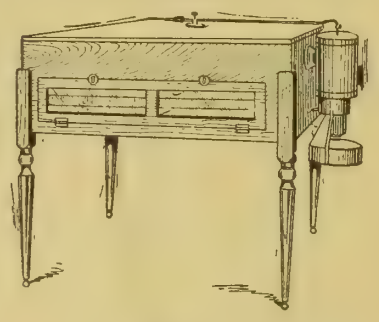
INCUBATORS.

Made in Our Factory—No Middleman's Profits.

This is a line of Incubators for those earnest poultry keepers who want nothing but a reliable Hatcher.

These Incubators are made of wood, covered with heavy galvanized iron, well finished. They are double walled; the space between being packed with cotton batting. The tops are also packed with several thicknesses of the same material to protect them from the changes of outside temperature. The windows are of double glass with air space.

The heater, the Thermostat, the lamp rest, the shield and deflector are of the best throughout.



1911 Model.

	Eggs	Weight	Price
Size A	130	60 lbs.	$13.25
Size B	140	120 lbs.	15.80
Size C	360	150 lbs.	26.00

Everything automatic. Nothing to do but to fill the lamp and trim the wick. They run themselves. We guarantee them to be satisfactory to you, or money refunded.

INSECT POWDER.

For setting hens, young chicks and the dust bath. Death to all vermin. Not intended to take the place of Stayco Liquid Lice Killer, which is always needed in this climate.

2½ lb. package.....$0.31
5 lb. package..... .55

STAYCO LIQUID LICE KILLER.

Kills lice on poultry without contact with the fowls. Spray the inside of the chicken house—fumes do the work, and not injurious to poultry.

1 quart $0.25
½ gallon ..... .40
1 gallon ..... .65

CRUDE CARBOLIC ACID.

To be used as disinfectant, deodorizer, insect killer and general purifier.

½ gallon $0.40
1 gallon ..... .65
5 gallons 2.25

STAYCO SQUIRREL POISON.

Composed of poisoned grain for the destruction of squirrels, gophers, rats, mice, etc.

1-lb. package $0.16
5-lb. package ..... .70

STAYCO ROUP CURE.

A guaranteed preventive and cure for Roup. If it fails we refund your money. Roup is indicated by a watery discharge from the eyes and nostrils, and if not checked, the head will begin to swell. Stayco Roup Cure is a positive cure.

50 cents size.....$0.35
$1.00 size ..... .65

STAYCO CHOLERA CURE.

After testing many different cures, we have found the Stayco Cholera Cure most effective. It is the best cholera remedy for turkeys. It prevents and cures roup, diarrhoea, cholera and other poultry diseases.

25 cents size.....$0.20
STAYCO Chick Feed $2.60 per 100 lbs.

STAYCO BEDBUG KILLER.

Liquid—Non-Poisonous.

As the name implies, it is non-poisonous. It is also very efficient and safe, if used away from fire and open lights.

Per Gal.....$1.75 Pint.....$0.35

POULTRY NETTING.

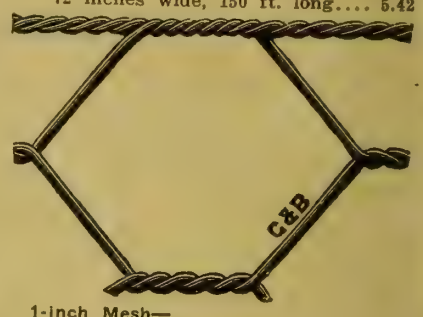
Sold in rolls of 150 lineal feet only. Carried in stock all widths, 12 to 72 inches. In ordering specify width, size of mesh, and gauge of wire. We quote only No. 20 gauge wire, which is the common standard used.

2-inch Mesh— Per roll.

12 inches wide, 150 ft. long....$0.65
24 inches wide, 150 ft. long.... 1.30
36 inches wide, 150 ft. long.... 1.95
48 inches wide, 150 ft. long.... 2.60
60 inches wide, 150 ft. long.... 3.25
72 inches wide, 150 ft. long.... 3.75

1½-inch Mesh—

12 inches wide, 150 ft. long.... .90
24 inches wide, 150 ft. long.... 1.81
36 inches wide, 150 ft. long.... 2.70
48 inches wide, 150 ft. long.... 3.61
60 inches wide, 150 ft. long.... 4.51
72 inches wide, 150 ft. long.... 5.42



1-inch Mesh—

12 inches wide, 150 ft. long.... 1.69
24 inches wide, 150 ft. long....3.33
36 inches wide, 150 ft. long.... 4.97
48 inches wide, 150 ft. long.... 6.61
60 inches wide, 150 ft. long....8.27
72 inches wide, 150 ft. long.... 9.90

Above wire is galvanized before weaving.

Fence Wire and Poultry Netting
Staples, Fence Nails, Bale Ties, Plain Wire, Barbed Wire

WIRE FENCE NAILS.

Kegs contain 10 lbs.

	Per cwt.	Per lb.
20 to 60 pennyweight	$2.90	$0.03½
10 to 16 pennyweight	2.95	.03½
8 to 9 pennyweight	2.95	.03½
6 to 7 pennyweight	3.10	.03½

WIRE STAPLES.

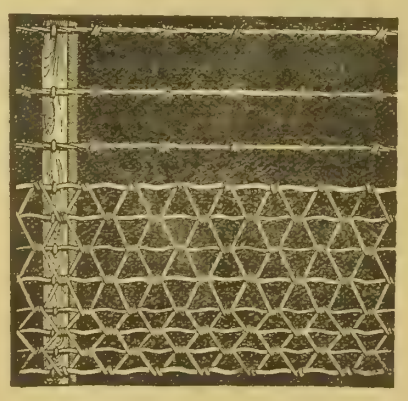
Sizes ¾ and 1½ in., lb.....$0.03¾
Kegs of 100 lbs., lb..... .03¼

HOG FENCE.

Style No. 27.

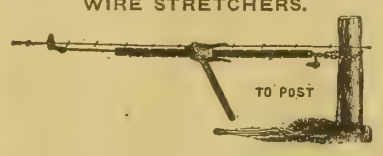
Showing the special diamond mesh Hog Fence with three barbed wires above. Rolls 20, 30 and 40 rods each. Construction same as Farm Fence.

Price does not include barbed wire.



Price same as quoted above for Farm Fence.

WIRE STRETCHERS.



No. 1—Ellwood—Double acting; flat steel bar, chain fastening, length 30 inches; weight 5½ lbs. Sell for $1.00
Our Price .....Each 80c

BALE TIES.

For baling or bundling hay, straw, etc.

Single Loop, 250 ties, length 10¼ feet, 37 lbs., per bundle.....$1.35

PLAIN WIRE.

All wire sold by the roll or reel only.

	Plain Galvanized.	Plain Annealed.
No. 12, 100 lbs., 3425 ft.	$3.50	$3.00
No. 13, 100 lbs., 4464 ft.	3.60	3.15
No. 14, 100 lbs., 5917 ft.	3.75	3.25
No. 15, 100 lbs., 7300 ft.	4.20	3.40
No. 16, 100 lbs., 9524 ft.	4.35	3.50

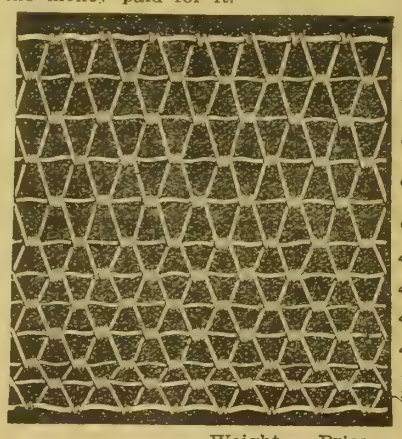
CUT DOWN YOUR GROCERY BILL or make the same allowance buy more. You can buy more good, dependable groceries here for the money than at your grocers. You can save middlemen's profits even after paying the freight.

CATALOG FREE—SEND CARD.

FARM FENCE.

Style No. 27.

Prices f. o. b. factory, Stockton, Cal. Rolls 20, 30 and 40 rods each. Top and bottom wires No. 9 wire, intermediate line wires Nos. 12 and 14. All wires of High Carbon self regulating Coiled Spring. If any of our wire fencing is not satisfactory in every respect, it can be returned at our expense and we will cheerfully refund the money paid for it.



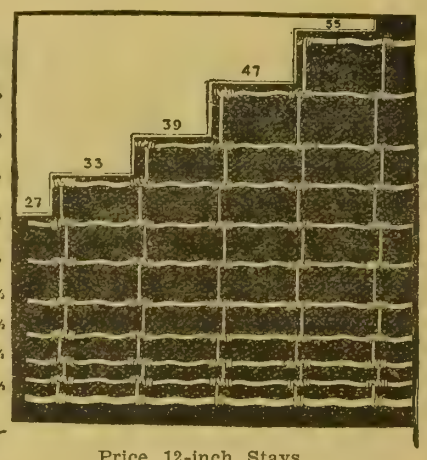
	Weight per rod.	Price per rod.
Height 54 inches	10.7 lbs.	$0.59
Height 48 inches	9.8 lbs.	.55
Height 42 inches	9.0 lbs.	.50
Height 36 inches	8.1 lbs.	.43
Height 30 inches	7.0 lbs.	.38
Height 24 inches	6.3 lbs.	.33
Height 20 inches	5.4 lbs.	.28

SQUARE MESH FARM FENCE.

Style No. 12.

Prices f. o. b. factory, Stockton, Cal. Height 27 to 55 inches. Rolls 20, 30 or 40 rods each. Stays 6 inches or 12 inches apart. Top and bottom wires No. 9, intermediate line wires No. 11, stay wires No. 12. All wires of high carbon self-regulating coiled spring.

The Tie in this fence is so constructed that it pulls tighter under strain instead of loosening, as is the case with ordinary fence ties. The greater the strain the tighter the wires lock together. The tie also aids in giving the fence rigidity, and reduces to the minimum the liability of the fence crushing down. Stay wires will not slip.



Price 12-inch Stays.

	Weight per rod.	Price per rod.
Height 55 inches	10.6 lbs.	$0.54
Height 47 inches	9.5 lbs.	.49
Height 39 inches	8.6 lbs.	.44
Height 33 inches	7.6 lbs.	.39
Height 27 inches	6.7 lbs.	.34
Height 21 inches	5.7 lbs.	.29

Price 6-inch Stays.

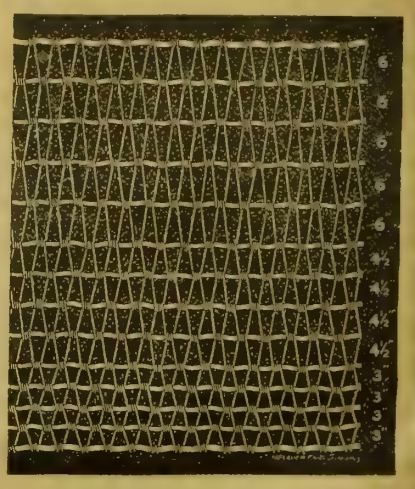
	Weight per rod.	Price per rod.
Height 55 inches	13.0 lbs.	$0.71
Height 47 inches	11.7 lbs.	.63
Height 39 inches	10.5 lbs.	.56
Height 33 inches	9.3 lbs.	.50
Height 27 inches	8.3 lbs.	.43
Height 21 inches	7.0 lbs.	.38

POULTRY AND RABBIT FENCE.

Style No. 28.

Showing special graduated diamond mesh Poultry and Rabbit Fence. Height 25½ to 60 inches. Rolls 10 and 20 rods each. Top and bottom wires No. 11 gauge, intermediate line wires No. 14, mesh wires No. 16—2½-inch mesh. All wires of self-regulating coiled spring.

This fence will stop poultry on one side, and hogs, sheep and cattle on the other, owing to the fact that it is constructed of all large wires, woven closely together. It is not necessary to use top or bottom rail with this fence. 2½-inch mesh.



Prices are f. o. b. factory, Stockton, Cal.

	Weight per rod.	Price per rod.
Height 60 inches	13.2 lbs.	$0.72
Height 54 inches	12.6 lbs.	.69
Height 48 inches	11.0 lbs.	.66
Height 36 inches	8.7 lbs.	.51
Height 30 inches	7.7 lbs.	.45
Height 25½ inches.	6.6 lbs.	.40

BARBED WIRE.

Two point, round barbs, 5 inches apart, galvanized or painted. Each reel contains 100 to 115 lbs. and is 1430 feet long.

Two-point, 100 lbs.....$3.20

NO MATTER WHERE YOU LIVE

we send big bills to towns far beyond yours. People keep ordering because of fair and honest treatment. Positively wholesale prices on everything. You are not too far away to save money by ordering direct.

BIG CATALOG MAILED FREE.

McSTAY
SUPPLY COMPANY
INCORPORATED

Wholesale Grocers, General Merchandise, Manufacturers

439 to 449 E. 3rd Street, Los Angeles, Cal.

Questions and Answers

THE EDITOR AND STAFF

Government Whitewash.

Please publish in your paper formula for government whitewash.—R. H., Fallbrook.

Slack one-half bushel unslaked lime with boiling water, keeping it covered during the process. Strain and add one peck of salt dissolved in warm water, three pounds of ground rice boiled to a thin paste, one-half pound powdered Spanish whiting, one pound clear glue dissolved in warm water. Mix these well and let the mixture stand for several days. Keep the wash thus prepared in a kettle or portable furnace and when used put it on as hot as possible with a paint or whitewash brush.

Standard For Rhode Island Reds.

How much of wing and tail feathers of Rhode Island Reds should be black? Is it all right for some of the long feathers to be partly red and partly black? What shade of red should the neck be, the back, the underparts? Is a very dark red, almost a blood red color, allowable on back and neck? This refers particularly to cock. Should the comb in a single comb variety be large or small, and how many points should it have?—I. H. H., Pixley.

Requirements in American Standard of Perfection are:

The general surface of the plumage should be a rich brilliant red, except where black is specified, and should be free from shafting or mealy appearance. The dark red on back is allowable in cock, but the less contrast with breast the better. In the wings the primaries should have lower web black, upper red. The secondaries should have lower web red and upper black. Wing coverts should be black. The main tail feathers and sickle feathers in the cock should be black with greenish shading; tail coverts mainly black running into red near the saddle. The tail of hen should be black except two top feathers may be edged with red. Under color should be red or salmon, free from slate or smut. Comb should be of medium size, having five even serrations, those in front and rear smaller than those in the middle.

Cherry Slug.

Please find enclosed some cherry tree leaves from my orchard which I would like to have you examine and let me know what the insects are, and how to rid my orchard of them.—J. I., Etiwanda.

This query was answered by E. W. Rust, of the Whittier Pathological Laboratory as follows:

Although the larvae arrived in a mumified condition and were very nearly unrecognizable, the cherry leaves showed a characteristic injury due to the cherry slug, Selandria cerasi. If the pest has not already disappeared it will doubtless do so very soon. However, if a remedy is deemed necessary the following spray applied by power or hand pump will prove effective if carefully applied: Lead arsenate 3 to 6 pounds; 100 gallons of water.

Red Ants.

What shall I do to get rid of little red ants? They are all over the yard and in the house.—Subscriber, Orange.

Get an original package of buhach, or if unable to get that, the ordinary Persian insect powder, if comparatively fresh, will answer. Buhach is a California product and more likely to be in good condition than the imported. This for the house is the best thing we know unless it is some of the ant pastes or similar preparations which have been advertised in the Cultivator. As to handling them in the yard where they have well defined holes or gathering places, the use of carbon bisulphide, boiling water or gasoline will destroy them entirely, while the buhach merely drives them away.

Alfalfa Seeding.

I sowed late in the spring time alfalfa and secured only about a half stand. Would you replow and refit the ground, or simply disk and reseed?—Subscriber, Parlier.

We would refit the ground entirely, get the very best seed bed possible and in October give heavy seeding with expectation of securing good stand. We say October. That would be our choice knowing no more of local conditions than we do. Your own neighbors can give advice in this particular.

Root Knot.

My peach trees have excrescences that have grown out from the trunk just below the surface. Trees seem to be making good growth and show no lack of vigor. How serious is this trouble? Will the trees be destroyed or their fruitfulness impaired? Can you suggest effective treatment. Is the disease transmitted in the soil, and should I remove these trees may others of a similar kind be planted? Is the disease confined to peaches and apricots? Would trees budded on Myrobolan stock be subject?—Subscriber, Hemet.

This is the ordinary crown gall or root knot which is a serious problem in California orchards. Once the ground has been thoroughly infected with the fungus all other trees planted there will be sure to be attacked. This does not obtain with citrus trees and some others. Walnuts and apples may be said to be practically immune, but all the stone fruits are very susceptible. When the knot first forms it may be removed, being careful to cut down to healthy wood, then painting the cut surface with Bordeaux mixture. This treatment is fairly effective. When the growth has wholly encased the crown, however, there is little use of trying to effect a cure. As the inquirer says, the trees may yet be looking healthy and still growing, but ultimately the effect will be more serious. We have however known of trees continuing to bear for years after the disease has been manifested. Myrobolan stock is not immune.

Nematode Worms.

I am sending roots of black eye beans. What is the matter with them and what causes the nodules or excrescences on the roots? Tops begin to turn yellow, soon dry and the vine dies. The ground is well irrigated. The trouble seems to be spreading in the field. The beans were planted in May. Is there anything that will prevent spread of the trouble?—Subscriber, Santa Ana.

This was referred to Dr. J. Eliot Coit who pronounced it a case of nematode worms for which there is practically no treatment except to plant upon the land crops upon which the worms will not feed and starve them out. Then beans may again be planted until the ground becomes infested a second time.

Nematodes on Melons.

I send cantaloupe root which is infested with some growth which kills plants. Many over the field are beginning to show the same trouble. The ground was previously planted to celery and I wish to plant a winter crop of peas and melons again another year. Would next year's melons be affected in the same way?—Subscriber, National City.

This, like the above, is simply a case of nematode worms living within the root and causing growth of galls. They are a serious pest, and we presume, as above noted, the only

(Continued on Page 209.)

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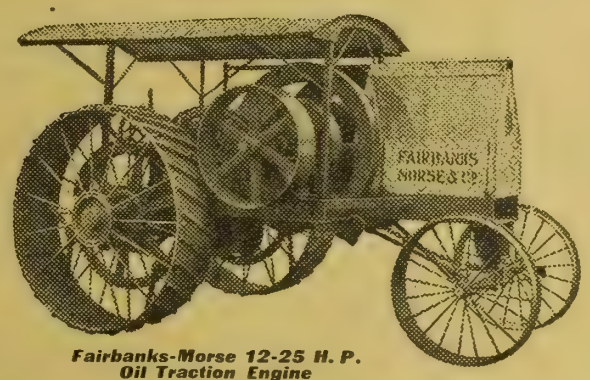

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20,000 feet	1¼-inch	Standard, at	5c per foot
30,000 feet	1½-inch	Standard, at	6c per foot
50,000 feet	2-inch	Standard, at	8½c per foot
10,000 feet	2½-inch	Standard, at	14c per foot
15,600 feet	3-inch	Standard, at	17c per foot
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20,000 feet	4-inch	Standard, at	24c per foot
30,000 feet	5-inch	Standard, at	40c per foot
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1,000 feet	10-inch	Diamond B. X. 40-lb. Special Casing, good as new	$1.00 per foot
1,000 feet	11⅝-inch	Casing, at	$1.00 per foot
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30,000 feet	4-inch	Casing, at	19c per foot
30,000 feet	3½-inch	Casing, at	16c per foot
20,000 feet	3¼-inch	Casing, at	15c per foot
25,000 feet	3-inch	Casing, at	14c per foot
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Three Imported Stallions, taken on a debt; no use for them; sell or trade one or all, half their value. 8 year, 1850 pound Black Belgian, $1500; 8 year 1400 pound Black German Coach, $1000; 4 year, 1700 pound Black Belgian, $1500. C. W. Brockman, 5101 S. Main St., Los Angeles, Cal.

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Three Half Bred Toggenburg Swiss Milk Does, sired by "Bismarck," also one three-quarter bred doe kid, 6 months old. Price $20 each, or $75 for all. Full description on application to W. E. Hyer, Hemet, Cal.

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Three Holstein Friesian Bulls, splendid young animals, for sale. Well marked and subject to registry. Write at once to Geo. C. Roeding, Fresno, Cal.

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For Sale—Shorthorn bulls and Berkshire hogs. Bred for size and quality. H. L. Murphy, Perkins, Cal.

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Local Representative Wanted. Splendid income assured right man to act as our representative after learning our business thoroughly by mail. Former experience unnecessary. All we require is honesty, ability, ambition and willingness to learn a lucrative business. No soliciting or traveling. This is an exceptional opportunity for a man in your section to get into a big paying business without capital and become independent for life. Write at once for full particulars. Address E. R. Marden, Pres. The National Co-Operative Real Estate Company, L 448 Marden Building, Washington, D. C.

Manager of Orange Property—Have had wide experience in handling orchards and alfalfa. Wish position as manager or in directing labor. Specially wide experience with the citrus. Address Y, Cultivator Office.

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Wanted—By young man, position as manager or foreman on fruit ranch. References. Address Box 61, R. F. D., Aptos, Cal.

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Planters invited to inspect our strictly high grade citrus trees. Robinson Citrus Nurseries, San Dimas, Cal. P. O. P. E. Rwy. to Valley Center, four blocks north.

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Los Angeles' new water supply from the Owens River Valley opens up the most fertile land in all of Southern California. This land is wonderful in its productiveness, beyond belief. Potatoes that run as high as 500 bushels to the acre, with an average of 330; alfalfa, 3 tons to the cutting; timothy, with 10-inch heads; corn, 70 bushels to the acre, and famous for hogs; the world's prize at the Portland Exposition for honey; the finest apples grown on the Pacific Coast, Spitzenbergs and Winesaps, the famous varieties; no better poultry country in California.

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For Sale—Rancho Summermont of 44 acres, situated in the beautiful and fertile El Cajon Valley, eighteen miles from San Diego. Ranch is improved with 9 room house with good barn and outbuildings, is irrigated with good well and new engine and pumping outfit, and two and one-half inches flume water. Has 12 acres citrus fruits, about 12 acres in deciduous fruit, shade and ornamental trees, with magnificent palm drives. Balance of land is used for grain. This would be an ideal location for a sanitarium, as well as for a private home. For further particulars address Summermont Ranch, El Cajon, San Diego Co., Cal.

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We deal in farm lands only, and make a specialty of Southern California and San Joaquin Valley farms.

With the hundreds of different farms listed in our office, we are naturally able to find the bargains, and it will pay you to investigate our lands.

If you want to trade your farm for another farm, tell us about it, giving us all the details. We are fully equipped to handle your property.

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If you wish to sell or exchange your farm, write to this office, giving all particulars. Our business is entirely farm lands in California. We have a half dozen salesmen, all of whom are farmers, and devote their entire time to buying, selling and exchanging farms.

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Wanted—A thoroughly experienced orange grove irrigator, cover crop grower. Up to date man only need apply. Call or address Eug. J. Sharadin, care Loftus Ranch, Monrovia, Cal.

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Gold Coin Potato Seed—The earliest white potato in cultivation. Two weeks earlier than Early Rose. Send for price and description. William Richard, 438 River St., Santa Cruz, Cal.

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How to Make Money—Mrs. A. Basley's Best Poultry Book is without exception the most wonderfully complete manual on the subject of successful poultry management ever written. The secret of how to raise every turkey hatched and the "Basley Formulas," now published for the first time are worth many times the price of the book. The "Western Poultry Book" is a practical book by a practical woman. Price $1. Address Mrs. A. Basley, Box 77, Venice, Cal.

The Goodacre Strains—Our Red chicks are hatching strong, only $12 per 100. Do you want Ancona chicks at $15 per 100 or $2 each? How about yearling males at $2? Leghorns and Anconas; $5 to $7 for R. I. Reds and Buff Orpingtons? Eighteen Plymouth Rock hens and cock for $20; R. I. Red yearling cock and four hens, $12; Buff Orpington young cock and four hens, $14. Write for our summer price list. Goodacre Bros., Compton, Cal.

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Olsen's White Leghorns. Day old chicks and hatching eggs are money makers for you. They lay and pay because they are bred that way. Book orders now for Fall, Spring and Summer deliveries. Address Olsen's White Leghorn Ranch, Sunnyvale, Cal.

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At Los Angeles Show, 1911, every first premium and two silver cups; two specials for best male and female. Place your order for fall cockerels. C. C. Bonnell, 2919 Bright Ave., Los Angeles, Cal.

For Sale—Pullets, cockerels and yearling Orpingtons (Cook strain), Black Minorcas (Northrup strain), White Minorcas, R. I. Reds (Tompkins strain), pure bred. C. Chamberlin, Los Gatos, Cal.

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Day-Old Chicks, Barred Rock and White Leghorns, good laying strain. Order now to insure early fall delivery. The Fairmount Hatchery, 29 B Rural No. 1, Santa Cruz, Cal.

Poultry Wanted—We pay the highest market price for all the local poultry we can get, no matetr how large the quantity; also fresh ranch eggs. We remit immediately. Allaway & Layton Co., 607 E. Third St., Los Angeles, Cal.

Orpingtons—High class Buff and White Bred to lay from prize winning stock. 500 pullets and cockerels for sale. Reasonable prices. Will mate pens with unrelated males. Write Mrs. S. Swaysgood, Route 1, Healdsburg, Cal.

White and Brown Leghorn Chicks for sale from good thoroughbred stock. Orders taken now for September and October delivery. Large orders solicited. Hausam & Gelatt, San Jose, Cal. R. 6, Box 218.

White Leghorns—Buff Orpingtons. Bred for beauty and great egg production. Grand lot of both old and young stock for sale. Prices reasonable. Write your wants. Model Poultry Farm, Box H, Irvington, Cal.

Hicks Jubilee Hatchery, now booking orders. Write us your wants. We use eggs from first-class stock only. Try us. W. J. Hicks, Petaluma, Cal.

Rose Comb R. I. Reds—A few fine breeding cocks for sale at bargain to make room. W. H. Pickering, 984 E. 55th St., Los Angeles, Cal.

500 Just Hatched White Leghorn Chicks from select, heavy laying, mature stock. Ready for delivery August 31. Thomas & Hawley, 504 E. Elm St., Lodi, Cal.

Illustrated Booklet—How I Raise Pheasants includes names of all known varieties, 25c. Prices free. H. W. Myers, Box 1098, Tacoma, Wash.

The Luedkes—Incomparable R. I. Red, Rose record layers—now booking orders for eggs for fall delivery. P. O., Anaheim, Cal., Route 1.

For Sale—116 R. I. Reds, White Minorcas and White Orpingtons, houses and wire netting. Address "P," Cultivator office.

For Sale—White Orpington cockerels, genuine Cook strain, very fine. A. H. Burlingame, Westminster, Cal.

Rose Comb Black Minorcas, nine years line bred. Stock and eggs in season. Eleano Minorca Farm, R. D. 1, Los Angeles, Cal.

The Great Navajo Strain of Barred Rocks. Eggs $3, cockerels $3. E. E. Hardy & Son, Santa Ana, Cal.

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White Fantail Pigeons—$1 per pair for squabs. Chas. Neidhardt, R. 4, Box 8, San Jose.

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QUERIES.

(Continued from Page 207.)

medy is starvation. It is barely pos-ple that fertilizing with nitrate of da or the use of lime will reduce the ouble, but we do not think this ould be profitable and practical. rtilizing heavily with tobacco dust ows good results. In hothouses, or here land is extremely valuable, eam pipes have been laid through e ground, and by heating the ground to a high temperature all such life s been destroyed. For ordinary ld culture where beans, melons, cumbers and some other garden plants e raised, and for vines, figs and aches amongst the larger fruits, is would not be practical. The inease of the worms is greater in ils which have been recently fertil-ed with coarse stable manure.

oup.

I am sending you under separate ver a specimen of a substance which llects in the eye of my thorough-ed bronze turkey gobler. I first no-ced about five months ago that his ad was slightly swollen and he emed a little droopy, and a few days er I discovered that there was some-ing in his eye, and I caught him d made an examination and found substance like that I am sending, d every day since I have removed out as much as I am sending and equently more. My entire flock is rfectly healthy and he seems in per-ct condition otherwise, except that e eyeball seems to have perished. you think he would do for a eeder another year?—Amateur, Mor-nhill.

Your turkey has roup of the eyes d the best treatment you can give m is to remove as you are doing the eesy substance which forms in the e and every day wash out the place th water and peroxide of hydrogen xed in equal parts. The govern-nt bulletin recommends permanga-te of potash for roup of the eyes. ough permanganate to make the ter a bright pink. I think however at "Germozone" would be even bet- because it has both permanganate d bluestone in it. Use it weak ac-rding to directions. Your turkey ll have lost entirely the eye when gets well. I cannot advise you to ep him as a breeder for another ar.—Mrs. A. B.

lving Time.

have a small Jersey cow, about years old that has not had a calf about three and one-half years. I pect her to come fresh in about a nth. I did not succeed in drying r until within the past few days. account of her not having been sh for so long I anticipate trouble d would like to do what I can to event anything which might have en avoided if taken in time. Being new hand in the farming business ish your advice as to the treatment care of this cow during the next rty days.—W. A., Cucamonga.

Why do you expect any trouble with s cow? I have not found that a cow at had not trouble in her last calv-; was any more subjected to trouble length of period between calves. e important thing for the last thirty ys is to keep the cow where she can ve moderate exercise and on a light ative diet. Green grass is of course st of all. The next best is bran feed moistened hay. Observe the dung see if it is soft and natural looking. e amount of feed should be of the n the same in weight she has been eiving. If she has not been having y grain feed begin to give it slowly first. Now as to her physical con-ion, if she is very fat reduce amount feed and try to bring her down a le in condition. As you say you ve little experience with cows I hes-itate to tell you to give her good physic of a pound and a half of Epsom salts with a tablespoonful of ground ginger the day before she calves. The reason I say hesitate is that an animal is easily drenched when one knows how but it is sometimes fatal if the liquid goes down the windpipe into the lungs. Some of your neighbors can probably do this for you all right. I have never lost a cow by drenching and the ordinary milkers do it all right. A cow that is kept staked should have a walk of a block or two once a day for exercise.—M. E. S.

"Little Leaf."

Enclosed find twigs of plum and peach trees, showing a spider web on them which seems to kill the trees. These trees were planted last spring (from the nursery), and also those which were planted a year ago are dying. What is the trouble and treatment?—G. S., Delano.

This query with specimen was referred to E. W. Rust, of the Whittier Pathological Laboratory, and he writes:

"The peach trees show no signs of insect trouble, other than the spider web spoken of. This spider web is surely not the cause of the unhealthy condition of the tree, but simply happens to be there because the spiders find these dead or dying twigs a suitable place in which to fasten their webs. I showed the twigs to Professor R. E. Smith, and he says to refer your subscriber to an article written by him in your paper for May 25, 1911, entitled 'Tree Troubles—Their Causes.' On page 648 of that issue he deals with the 'Little Leaf' of the peach, which seems to be the trouble with the twigs sent us."

From the article referred to we quote:

"The disease is characterized by the development of spindling, yellow, sickly looking shoots on the new growth, with small, narrow, yellow leaves. The leaves along the shoots drop off during the summer, leaving tufts at the ends. Fruit fails to develop, shrivels and drops. Worst on trees from three to seven years old. This trouble also attacks other stone fruits. . . .

"Subsoil examinations showed that the disease was practically confined to trees on light, sandy soils or subsoils, where the effects of the dry year of 1910 had been more pronounced. From these facts it appeared most probable that here a very specific disease had been caused by the preceding abnormally dry season. It all goes to show the necessity of actual knowledge at all times of the moisture condition of our subsoils. The effects attributed to parasites, lack of fertilizers and all sorts of obscure conditions, which are really due to nothing more than a lack of or irregular supply of water, brought about either by actual deficiency or bad physical soil conditions are too numerous to mention."

Windbreak.

Would you recommend crab apple trees for windbreak? Are there varieties of pears suitable? Would poplars be preferred? Next to Bartletts, what variety of pears would you recommend for commercial purposes for Southern California orchards, soil well drained but slightly heavy?—Reader, Pasadena.

We would much prefer the ordinary Monterey cypress, which is a far more rapid grower than any tree mentioned by the inquirer. It has, however, one fault—it is short lived. Eucalyptus would be preferable to the poplar, for its wood is of greater value, and as a windbreak it is fully its equal. Eucalyptus is generally considered a soil robber. Still, if a windbreak has to be provided for, the ground to grow it must also be granted. The apple or pear would not grow high enough for a windbreak. Next to the Bartlett, for commercial purposes, we would prefer the Winter Bartlett. Winter Nelis and other varieties have not proven good bearers in Southern California.

Irrigating Olives.

I have recently bought an olive grove which has had no irrigation for six years. Would you advise giving it thorough irrigation and cultivation each month, beginning this month, or would it be objectionable in starting new growth and possibly blossoms at the wrong time?—Subscriber, Highland.

Such a question can hardly be answered without knowing further particulars in the case, but our impression is that the orchard should be allowed to stand until another rainy season. Since it has lived six years, we believe it is better to trust it another three months rather than begin irrigaiton so late. Then, after the rains and deep plowing of the soil, heavy irrigation could be taken up in the spring-time and the ground so filled with moisture that it would make a continuous summer's growth possible. We believe a year from this fall your trees would be in better shape than if you began in midsummer.

Vinegar From Peelings.

Mr. T. W. Ewing, of Long Beach, sends us his method of making vinegar from peelings of apricots and peaches: "Fill vessel two-thirds full of peelings or mashed cull fruit, washed clean. Protect with thin cloth and let stand three weeks. Remove peelings and strain through wire sieve and also thin cloth. This will make vinegar, but not number one vinegar. Now add four teacups of sugar to each gallon, put back into clean vessels, and let it thoroughly work until a thick mother rises on top, which will be about one month. Remove this, strain and put in jugs, placing a part of the mother back in each jug or vessel, and in a reasonable time you will have first class vinegar that is nice, clean and wholesome."

Sebastopol's Apple Show

Official List of Apple Awards.

The people of Sebastopol and Sonoma County are jubilant over the success of their second annual Gravenstein Apple Show held last week. Financially and in every other way it was a winner. The crowds that thronged the exhibition tent saw beautiful fruit displayed with skill and taste. Below we give the official list of apple awards. The judges awarding the prizes were H. C. Atwell of Forest Grove, Oregon; Frederick Maskew of Sacramento, and P. J. O'Gara of Medford, Oregon.

CLASS I—APPLES.

Packers' Entry: The judges say: "In view of the extent and meritorious display and the evidence of painstaking work in the making up of these exhibits, we, the judges, respectfully suggest that the Earl Fruit Company, Garcia & Maggini and the Sebastopol Apple Growers Union be each awarded a complimentary gold medal."

Growers' Entry—Best 60 boxes of Gravensteins: First prize, Mrs. Ida S. Hunt; second prize, John W. Turner; third prize, W. Y. Walker; fourth prize, I. B. Morris.

Best 50 Boxes of Gravensteins: First prize, Cochran & Hotle; second prize, J. J. Alves; third prize, W. J. Bower; fourth prize, Maddocks & Treadway.

Best 16 Boxes of Apples (several varieties may be used): First prize, Kauffman & Arnold; second prize, W. H. Baker; third prize, Beattie & Bassett; fourth prize, Laura E. Barlow.

Best Exhibit Seven Varieties (in regulation box): First prize, Mrs. J. W. Turner; second prize, Kauffman & Arnold; third prize, Lawrence Meyer.

Best Ten Boxes of Gravensteins: First prize, Cochran & Hotle; second prize, M. J. Moniz; third prize, Laura E. Barlow.

Best Five Boxes Gravensteins: First prize, T. J. Pilkington; second prize, M. J. Moniz; third prize, Laura E. Barlow.

Best One Box of Gravensteins: First prize, Mrs. J. W. Turner; second prize, D. U. Toffelmier; third prize, M. J. Moniz.

Best Display of Apples in Plates (not less than twelve plates, and five apples to a plate): First prize, Kauffman & Arnold; second prize, Ida S. Hunt; third prize, Laurence Myer; fourth prize, D. U. Teffelmier; fifth prize, Sebastopol Grange; sixth prize, O. M. Winkler; seventh prize, Laura E. Barlow; eighth prize, Robert Linebaugh; ninth prize, Frei Bros.

Best Exhibit of Apples in Baskets (not less than six baskets): First prize, D. U. Teffelmier; second prize, Ida S. Hunt; third prize, Laura E. Barlow; fourth prize, Healdsburg Chamber of Commerce.

DISTRICT EXHIBITS

Best Exhibit From One District: First prize, Stony Point; second prize, Forestville Ranch; third prize, Graton; special mention, Pleasant Hill.

CLASS II—FEATURE EXHIBITS.

Best Feature Exhibit: First prize, Pleasant Hill; second prize, Stony Point; third prize, Sebastopol Japanese Society; fourth prize, W. C. T. U.; fifth prize, W. S. Liddell; sixth prize, Glockner & Dorward; seventh prize, Boys and Girls Aid Society; eighth prize, Forestville; ninth to eighteenth prizes, Analy Union High School; tenth prize, Graton; eleventh prize, Sebastopol Grange; twelfth prize, M. C. Kauffman; thirteenth prize, F. Wedehase; fourteenth prize, Western Apple Vinegar Company; fifteenth prize, O. M. Winkler.

CLASS III—JUVENILE SECTION FEATURE EXHIBITS.

First prize, Harold Baker; second prize, Ben and Hall Woodworth.

CLASS IV.

Best Exhibit of Horticultural and Agricultural Products From One Ranch: First prize, D. U. Toffelmyer; second prize, Frei Bros.; third prize, Mrs. A. Woodworth; fourth prize, Occidental District.

Best Exhibit of Corn on Stalk: First prize, Sebastopol Grange; second prize, F. A. Brush; third prize, Healdsburg Chamber of Commerce.

Best Exhibit of Grain in Sheaf: First prize, Frei Bros.; second prize, Graton District; third prize, Sebastopol Grange.

Best Exhibit of Spuds: First prize, M. J. Mullaly; second prize, D. U. Toffelmier.

Best Exhibit of Vegetables: First prize, D. U. Toffelmier; second prize, Frei Bros.; third prize, D. B. English.

Best and Largest Exhibit of Pumpkins: First prize, Sebastopol Grange; second prize, Kauffman & Arnold.

DRIED FRUIT EXHIBIT.

Best Exhibit of Gravenstein Apples, Five Boxes of Twenty-five Pounds Each: First prize, Y. Fujii; second prize, Kauffman & Arnold; third prize, Singmaster Bros.; fourth prize, Mrs. C. P. Weyhe; fifth prize, Frei Bros.

Largest and Best Exhibit From One Farm (all farm products considered): Frei Bros.

SPECIAL PRIZES.

Best 25 Boxes of Apples (regardless of variety): First prize, J. W. Turner; second prize, Charles Solomon; third prize, Mrs. C. P. Weyhe.

A complimentary gold medal was awarded Luther Burbank's exhibit. None of the fruits or flowers shown by Mr. Burbank were in competition, but the Sebastopol Gravenstein Apple Fair Association honored him by bestowing the medal for his meritorious exhibit, which has proved such a fine attraction in the pavilion.

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And Nature holds, in wood and field,
  Her thousand sunlit censers still;
To spells of flowers and shrub we yield
  Against or with our will.

I climbed a hill path strange and new
  With slow feet, pausing at each turn;
A sudden waft of west wind blew
  The breath of the sweet fern.

That fragrance from my vision swept
  The alien landscape; in its stead,
Up fairer hills of youth I stepped,
  As light of heart as tread.

With me June's freshness, lisping brook,
  Murmurs of leaf and bee, the call
Of birds, and one in voice and look
  In keeping with them all.

A fern beside the way we went
  She plucked, and smiling, held it up,
While from her hand the wild, sweet scent
  I drank as from a cup.

O potent witchery of smell!
  The dust-dry leaves to life return,
And she who plucked them owns the spell
  And lifts her ghostly fern.

THE GOVERNOR'S DAUGHTER.

The governor, florid, stout and apopletic, sat gorging himself inside the sheriff's house. Five and twenty yards away the convicts waited in their stockade for his inspection. The great boiler, containing melted turpentine, bubbled and hummed, and from the vistas of pine trees on every side carts emerged, drawn by mules and driven by trusties.

As the sheriff waited outside the house a girl appeared on horseback.

"Is popper through with his dinner?" she asked. "No, don't disturb him; he hates to be hurried when he's eating. You're the sheriff, aren't you?"

"Yes, madam," the sheriff answered, removing his hat.

"Oh, won't you please help me?" said the girl, clasping her hands. "I do so want to see the convicts. I've never seen a convict, and popper wouldn't take me along, so I just slipped away. Listen!"—as a slow snore came from within—"I guess he's having his after-dinner nap, and he'll be furious if you wake him. Won't you please let me inspect the convicts?"

No true southerner could resist such an appeal. They passed together through the iron gates of the log stockade, into the court, in which white prisoners and black stood listlessly, serving their sentences in company with several mangy curs and a litter of pigs, as well as some fowls that ran squawking before the newcomers. In the four towers at either corner guards sat immovable with loaded rifles.

"Are these all?" asked the girl, scanning the sullen groups with eager, interested, and, it appeared, half-frightened eyes.

"Where's Jim Durgan?" asked the sheriff, curtly, of an old colored trusty.

"He's in dar, sheriff," the man answered.

"Who is Jim Durgan?" the girl asked.

"He's what we call a 'lifer,' miss," the sheriff responded. "Sent up for murder five months ago. He was never much good—drunkard and all that, though a fine worker when he chose. Got into a fight with another tough character over some girl; both drew and Durgan fired first. Many thought he should have been acquitted, but I guess the jury sent him up on account of his reputation. The girl was of quite a superior class; went to the governor and begged him to intercede with the pardon board; when that failed hired thugs to break into the jail and rescue him. That's him."

A tall, lean, sunburned man came slowly out of the inclosure and looked 'round inquiringly. There was some dignity in his poise; he seemed different from the convicts around him.

"Oh, I know he has the makings of an honest man," cried the girl impulsively. "I'll go to popper and just make him intercede for him." The man smiled scornfully and eyed the sheriff with cold disdain. "Won't you take him up to popper now?" she continued, clasping her hands. "He's always in a good humor when he wakes up from his nap. Oh, please do this for me, and I'll do anything you ask me."

The sheriff looked dubious.

"He's a desperate character, miss," he answered. "Had to be put in irons once."

"I'm sure he'll give his word of honor to go quietly," said the girl with tears in her eyes. "Won't you please—please do this for me?"

The sheriff placed his hand on the prisoner's shoulder. "You're sure your pa won't be mad about it, miss?" he asked. "Well, I'll risk it." They passed out of the gates together.

As the trio approached the front of the house where the horse stood tethered the girl looked back and gave a loud scream.

"Look, look!" she cried.

The sheriff turned with a start; every one turned, even the fat governor, standing at the door of the dining room. There was a scurry, a splatter of dust, a vision of a galloping steed bearing a girl and a man who turned back to laugh insolently—then nothing but an echo among the distant pines.

"What in—" began the governor.

"Your daughter—" stammered the sheriff.

"Daughter, confound you? I'm a bachelor," the governor spluttered.—Universal Magazine.

THE BEAUTIFUL HOME.

From a series of prize essays upon the beautiful home published in the Ladies World we reprint the first prize article which has many valuable suggestions.

Home, to be really beautiful, must inspire first of all a sense of ease and restfulness. Everything must fit, and appeal not to the eye alone, but to the inner consciousness of its inmates, with the real appeal of a true home. However beautiful and costly in themselves the furnishings may be—however well trailing vines may obscure ugly views—however perfect the color-scheme—still there's no real beauty if they arouse, as one looks about, feelings of apprehension and worry because of bills staring them in the face, or because, even though paid for, they have left but an empty purse.

The home wherein the housekeeper

is too tired to be kind—too busy to find time for any of the little personal touches that make one attractive to the eye—too worried for fear of a spot or a stain to take comfort—too much occupied with the care of over-much beauty to give companionship to her husband or family—though neither money nor strength have been spared in the search for it, still has nothing of the real beauty of home therein.

See, then, in the search for beauty, that the furnishings fit your purse. See that they meet the requirements of your intellectual nature, and the individual needs of each member of your family. See, also, that they fit your strength. Many a woman who cannot afford to keep help, wears herself out, body and soul, in striving to keep her home in order—the furniture spotless—and the numerous bric-a-brac free from dust—because she is in bondage to a false idea of what constitutes a beautiful home. Better, far, do without the heavy draperies, the lace curtains, the thousand and one adornments that keep one constantly at work, and in a simpler, saner home find time to read, to smile, to tuck a rose in the hair or belt.

Many a man reaching home, weary after his day's work, either physical or mental, would appreciate far more a fresh, bright wife than all the spick and spanness of upholstered furniture, shining wood and costly rugs. Ask him wherein lies the beauty of home, and see what his answer will be. Ask yourself, and in the honest silence of your own soul's speech see what reply comes back.

I'd not in any sense belittle the artistic beauty that appeals to the eye, but in our search for it we too often are in bondage to a mistaken idea, and forget that it means far more than mere decoration of wall and floor space, the finishing of woodwork, the dim light of stained glass, or even the beauty of trailing vines or ferns or stately palms. For while all these have their place, of themselves they are nothing. It's the intangible something that gives comfort, and peace, and good-fellowship, that constitutes beauty in the home, and makes of it home — not merely the house where one resides.

RECIPES.

French Mustard.

Rub three tablespoonfuls dry mustard and one tablespoonful sugar thoroughly together; then stir in a raw egg until perfectly smooth. Add a cupful of vinegar, a little at a time; when well mixed, boil for three or four minutes, stirring constantly. When cold, add one teaspoon olive oil, beating until perfectly smooth.

Another French Mustard.

Beat together one egg (or two yolks), three tablespoons mustard, one tablespoon sugar. Add slowly one teacupful of vinegar, and cook until thick, stirring constantly.

Sweet Pickled Figs.

Seven pounds figs, three pounds sugar, one-half pint vinegar, two lemons sliced, cinnamon and cloves to taste. Boil altogether two hours (slowly).

Cream of Corn Soup.

Remove the corn from one can, cover with three cups of water; simmer for one hour, press through a sieve. Scald three cups of milk; add the corn and one tablespoonful of butter well mixed with one tablespoon of flour. Cook until smooth; season with salt and pepper, add one-half cup cream and stir until heated. Take from the fire and add one beaten egg, and serve at once.

Waffles.

Add two level teaspoonfuls of baking powder to two cupfuls of sifted pastry flour, with one-half teaspoonful of salt. Beat the yolks of two eggs light, add one and one-fourth cupfuls of milk, and add the liquid to the flour, beating until smooth and light. Beat the whites of the eggs to a stiff, dry froth and add to the batter with one tablespoonful of butter, melted. Bake in waffle iron.

Note that one tablespoonful of butter melted is a different thing from one tablespoonful of melted butter—the former measuring more than the latter.—Good Housekeeping.

Zinfandel Blanc Mange.

Soak one packet Chalmers' gelatin in one pint of Zinfandel grape juice for one hour; then set it over boiling water till dissolved. Add one quart cold grape juice; stir thoroughly. Pour into molds and set on ice. Serve when solid, with whipped cream. A little cinnamon and cloves or other spice may be added to the grape juice.

Zinfandel Punch.

One quart grape juice, one lemon, one cup sugar, one large lump of ice.

Lemon Sauce.

Two cups sugar, two eggs, juice of two lemons. Beat all together, and just before serving add a pint of hot water, a tablespoon of cornstarch and one-half cup butter. Let all come to a boil.

Orange Sherbet.

Two pounds white sugar, two quarts water, juice of six oranges and three lemons. Strain and freeze like ice cream.

Eggless Layer Cake.

One cupful of sugar, one-quarter cupful of butter; cream sugar and butter together; two cupfuls of flour, one cupful of sweet milk, two teaspoonfuls of baking powder, one-quarter teaspoonful of soda in the milk. Any filling you wish.

HOMELY HINTS.

Buttermilk is the best possible thing to clean linoleum and oilcloth.

For a bee sting, simply drop chloroform on the stung place and it will entirely kill the poison.

Apply as quickly as possible a piece of ice—holding it on the injured part for several moments and no blister will appear.

When making baked custard, if the milk is warmed before adding the eggs no water will settle in the bottom of the baking dish.

Eyeglasses may be made bright and clear by spraying them with alcohol from an atomizer and then rubbing with soft tissue paper.

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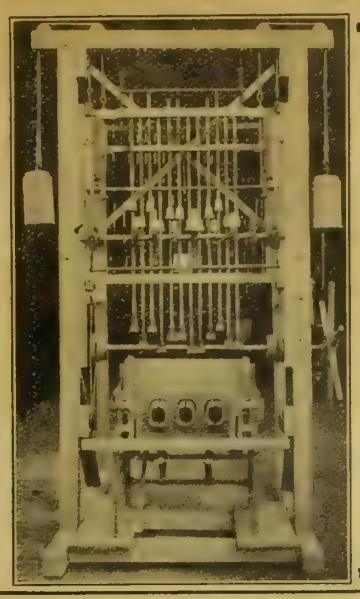

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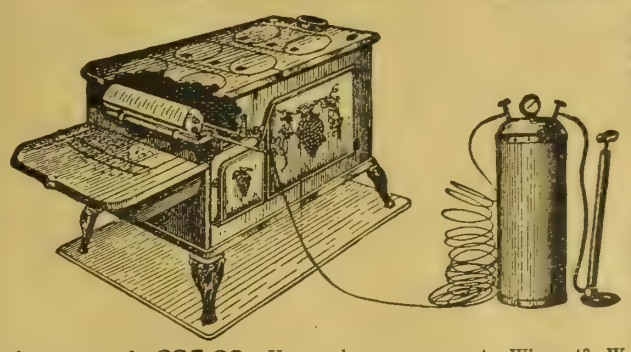

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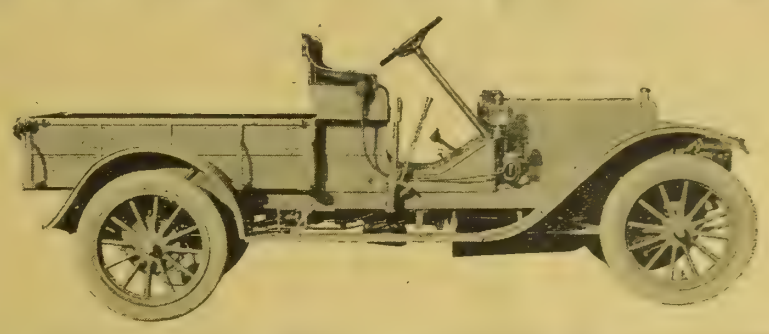

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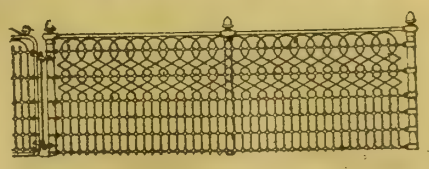

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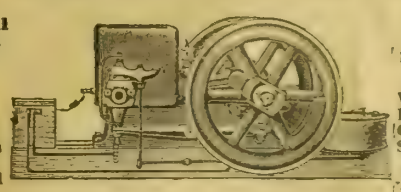

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San Francisco-Los Angeles Produce Markets

Los Angeles Market

LOS ANGELES, Aug. 30, 1911.

Butter.

There has been no change whatever in prices of butter. Receipts 36,826 pounds.

Prices to trade 2½c in advance of the following Produce Exchange quotations:

Extras	25½
Firsts	25
Ladies	23
Country	20

Cheese.

Local Anchor	16
Oregon Daisy	16½
Northern Fresh	16
Domestic Swiss	18
Imported Swiss	30@32

Eggs and Poultry.

A drop of one cent on local ranch and case count since last week. There are practically no receipts from the outside. Demand for local product about equals receipts and an increase is looked for soon.

Paying prices f. o. b. Los Angeles are:

Local ranch, candled	34
Case count buying price	30
Eastern	25@26
Pullets	20

Dealers pay for live poultry f. o. b.:

Hens, per lb	15
Roosters	6
Broilers	14
Fryers	12
Roasters	14
Turkeys	23@27
Ducks	12
Geese	10
Guinea hens, doz	4.00
Squabs, doz	1.75

Live Stock.

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs	7¼
Prime steers	6
Heifers	6
Calves, per lb	6½
Sheep, ewes, per head	4.75
Lambs, per head	3.75@4.25
Wethers	5.00@5.50

Potatoes.

Wholesale prices are:

Sweets, yellow, lb	3@4
Burbanks, lug	1.50@1.75
Highlands, ctl	1.50@1.75

Onions.

Wholesale quotations:

Australian Red, ctl	1.75
Silverskins, box	40@50
Yellow Danvers, ctl	1.25@1.50
Garlic	5@6

Vegetables.

Wholesale quotations:

Artichokes, northern, doz	75@1.00
Beets, doz bunches	20@25
Bell peppers, lb	4@5
Beans	3@4
Green chilis	3@5
Chilis, dried	15@20
Cucumbers, lugs	35
Cabbage, sack	80@90
Cabbage, red, lb	3
Cauliflower, doz	1.50
Celery, new, crate	2.25
Carrots, sack	1.00@1.15
Corn, lug	40@50
Egg plant	3@5
Horseradish lb	12½
Onions, green, doz bunches	20@25
Kohl-rabi, doz bunches	40
Leeks, doz	45@50
Lettuce, crate	1.00@1.25
Mushrooms, basket	3.50@4.00
Oyster plant, lb	5@6
Okra	5@6
Peas, lb	5@7
Parsley, doz bunches	25@30
Parsnips, doz bunches	45
Radishes, doz bunches	15@20
Rhubarb, Strawberry	1.00@1.25
Spinach, doz	20@25
Squash, summer	25@30
Spearmint, doz	25@30
Tomatoes, lug	25@40
Turnips, sack	1.00@1.25
Watercress, doz	25@40

Citrus Fruits.

Valencias	2.75@3.50
Grapefruit	1.75@2.75
Lemons	2.00@3.75
Limes, hundred	1.25

Fresh Fruits.

Wholesale prices on the market are:

Apricots, crate	1.25@1.50
Apples, W. Astrachan	1.25
Apples, Gravenstein	1.50@1.65
Apples, Alexanders	1.10
Apples, Bellflowers	1.25@1.35
Apples, Crab, lug	1.60
Bananas	3½@4
Casabas, crate	1.50
Cantaloupes, small	50@60
Cantaloupes, large	1.10@1.25
Figs, box	75@1.25
Grapes, Thompson Seedless, lb	3
Grapes, Black, crate	1.50
Grapes, Malagas, lug	90@1.00
Loganberries	6@7
Nectarines, lug	1.25@1.50
Peaches, lug	50@75
Pineapples	7@8
Plums, Clymans, lug	1.50
Plums, Satsuma	90@1.00
Plums, Tragedy	1.50
Plums, Burbank	75@85
Plums, Green Gage	1.75
Prunes, Simoni	1.25@1.50
Pears, Bartlett, lb	6@7
Blackberries	5@6
Raspberries	7@9
Strawberries	4@6
Watermelons, lb	¾@1

Dried Fruits.

Wholesale prices to retailers are:

Evaporated Apples, fancy, lb	15
Apricots	16@17
Figs, box	1.65@2.00
Peaches	12½@13
Nectarines	12
Pears	12@13
Prunes	10@16
Plums	10

Beans Dried.

Wholesale quotations:

Limas	6.75
Black eyes	8.00
Pinks	5.50@5.60
Lady Washington	4.25
Small white	4.00@4.10
Garvanzas	4.50
Bayous	4.50@5.00
Lentils	6.00@7.00
Mexican Reds	4.75@5.00

Nuts.

Wholesale quotations:

No. 1 soft shell walnuts	18
Almonds, IXL, lb	19@20
Pecans, polished	15@17
Peanuts, Eastern	8
Peanuts, California	6
Pine Nuts	18

Honey.

Wholesale quotations:

Extracted water white	8
Extracted light amber	7
Comb water white	16@17
Light amber	13@14
Beeswax	30

Hay.

Buying prices f. o. b. cars Los Angeles are:

Barley hay	11.00@13.00
Wheat hay	11.50@12.50
Tame oat	14.00@15.00
Alfalfa	12.50

Grain.

Wholesale selling price f. o. b. Los Angeles:

Wheat, new, cental	1.65@1.70
Corn	1.70@1.95
Kaffir	2.10
Millet	3.75
Popcorn	4.75@5.00
Egyptian corn	1.65
Red oats	1.80
Seed barley	1.50

Feed Stuff

Wholesale selling price f. o. b. Los Angeles:

Alfalfa meal	1.15
Beef scrap	3.10
Cracked corn	1.90
Cracked wheat	1.85
Shorts	1.95
Bran	1.70
Oil cake meal	2.50
Feed meal	1.95
Rolled Barley	1.70
Middlings	1.85

San Francisco Market

SAN FRANCISCO, Aug. 29, 1911.

Butter.

Butter has fallen off a half cent on upper grades owing to heavy receipts, 100,000 pounds being placed on the market today.

Prices to trade 2½c in advance of the following Produce Exchange quotations:

California extras, lb	25½
Prime firsts	24½
Firsts	24
Seconds	22

Cheese.

Cal. flats	11@14
Cal. Y. America, fy, new	14@15½
Oregon, fancy	13½

Eggs and Poultry.

A slight decline from last week's quotations is noted on upper and lower grades. Firsts and seconds remain as previously quoted.

Official quotations of the San Francisco Wholesale Dairy and Produce Exchange are:

Fresh ranch extras	30
Prime firsts	28
Firsts	27
Seconds	19½
Eastern seconds	15
Select pullets	24
Hens, doz	4.00@9.00
Fryers, doz	4.50@5.50
Ducks	4.50@7.00
Broilers	2.50@4.00
Roosters, doz	4.00@9.00
Geese	2.00
Goslings, pr	2.00@2.25
Pigeons	1.50@2.25
Turkeys	25@30
Squabs	2.00@2.50

Live Stock.

San Francisco prices, gross weight:

Steers	4@5½
Cows and heifers	3@4½
Calves, lb	5@6¾
Hogs	5@7½
Wethers, No. 1	4@4¼
Milk lambs	5@5¼
Ewes, No. 1	3½@3¾

Potatoes.

Wholesale market quotations:

River whites, ctl	1.00@1.25
Sweets, lb	2@3

Onions.

Yellow, new	65@75
Garlic, lb, new	3@4

Vegetables.

Wholesale quotations:

Asparagus, box	1.00@1.75
Beans, string	1@1½
Beans, wax	1@1½
Limas	2@3
Bell peppers, box	75@1.00
Carrots	60@75
Cucumbers, box	25@35
Corn, sack	75@1.00
Chili peppers, box	25@35
Celery, crate	1.50@2.50
Egg plant, box	50@85
Cauliflower, doz	50@60
Lettuce, crate	75@2.00
Okra, box	50@75
Peas, sack	1.50@1.85
Hubbard squash, sack	1.00
Summer squash, lug	20@25
Tomatoes, box	25@65
Turnips	60@75

Citrus Fruits.

Valencias	3.25@4.00
Grapefruit	1.50@2.75
Lemons	1.50@4.00
Limes, Mexican	6.50@7.00

Fresh Fruits.

Apricots, crate	65@1.00
Apples, Gravensteins	75@1.60
Cantaloupes, standard	75@1.00
Cantaloupes, Rivers	1.00@1.25
Nutmegs, large, crate	20@25
Figs, layer, single	40@50
Grapes, blk	50@75
Grapes, Thompson Seed., crate	40@50
Grapes, blk	40@50
Grapes, Muscat, box	50@65
Peaches, box	50@1.00
Pears, box	75@1.25
Plums, box	50@75
Prunes, German, box	60@85
Loganberries, chest	4.00@6.00
Blackberries, chest	3.00@4.00
Raspberries, chest	7.00@10.00
Strawberries	4.00@6.00
Pineapples, Hawaiian	2.00@3.50
Bananas	1.00@1.50
Watermelons, doz	1.50@2.50

Dried Fruits.

FRUITS—1911 crop, f. o. b., carload lots, per lb.—Apples, 11@12¼c; Apricots, 15¼@18c; Peaches, 10¼@11½c; Prunes, bulk basis, 5½@6¾c; per lb., 4¾@9c, with a premium of ½@1c on large sizes; Figs, 5@6c for White; Pears, 11@14¼c.

RAISINS—1911 crop: Seeded, per pkg.—Fancy, No. 16, 7¾c; Choice, No. 16, 7½c; Loose Muscatels, in 50-lb. boxes—Standard, 4-crown, 6½@7c; do, 3-crown, 6@6½c; do, 2-crown, 5½@5¾c; Seedless—Muscatel, 5¼@5½c; Sultanas, 6¼@6½c; Thompsons, 7@7¾c.

Nuts.

Walnuts, No. 1 soft shell	16@16½
Walnuts, No. 1 hard shell	14½
Almonds, '10, N P U	16@16½
Almonds, '10, Nonp	18@18¾
Almonds, '10, I X L	16½@17¼
Pecans	14@17
Chestnuts, California	6@8
Peanuts	5@5½

Beans Dried.

Limas	5.75@5.90
Pink	4.75@4.85
Black eyes	5.75@6.00
Small white	3.60@3.75
Large white	3.50@3.75
Kidneys	5.50@5.60
Garbanzos	3.00@3.25
Bayou	3.75@4.00
Horse beans	1.50@2.00
Red Mexicans	5.25@5.40
Cranberry	3.30@3.75

Hops

Hops, coast, 1910	35@38
Hops, 1911 contracts	43@45
Hops, Oregon, 1911	43@45

Honey.

Water white, comb, '11	15
Dark comb	12½
Extracted white, '11	9@10
Extracted dark	6½
Beeswax, lb	24@30

Hay.

Scott, Magner & Miller say:

We have received on the San Francisco market during the past week 4900 tons of hay. This is a large amount to be received in six days, but we are right at the height of the season now and the hay is being readily taken care of. The above amount includes large consignments of alfalfa that have come in as well as other medium grades now being shipped in from the bay and river landings and arriving by boat.

With the rapid advance that has taken place in oats and in barley, and with the general feeling of a shortage in the better types of hay, it is not surprising to anyone interested in the situation to see our markets on hay advance somewhat. During the week there has been a decidedly better feeling throughout the entire market, and prices on the entire line of good grade hay are a little higher and the feeling at this writing decidedly strong with an advancing tendency.

There is very little of the choice grades of wheat hay or of red oat hay offering. These particular varieties are actively sought now.

Trade in alfalfa hay is now active and large lots are being moved from the fields into natural trade channels. This article stands on an entirely different basis from horse hay. There is no demand from Puget Sound for alfalfa hay such as developed last season when large quantities were shipped from this port into the northern markets. All of our alfalfa hay will have to be taken care of in the regular way and without any outside demand to relieve the situation.

Straw appears to be in better favor for the reason that the quantity is not as large as was estimated and the market is firmer.

We quote the wholesale prices in round lots on today's market as follows, viz:

Fancy wheat hay	16.50@17.00
No. 1 wheat or wheat & oat	14.50@16.00
No. 2 wheat or wheat & oat	12.00@13.00
Choice tame oat	14.00@14.50
Other tame oat	10.00@13.00
Wild oat	10.00@12.00
Stock hay	5.50@6.00
Alfalfa	9.00@11.00
Straw, bale	55@60

Grain.

Wheat	1.42½@1.47½
Barley, fancy	1.60
Barley, good to choice	1.55@1.57½
Barley, poor to fair	1.47½@1.52½
Corn	1.60@1.62
Oats, red	1.57½@1.70
Rye	1.50@1.60
Mustard, brown	5½
Alfalfa seed	18
Millet	3@3½
Flaxseed	5@5½
Broom corn seed, ton	25.00@30.00

Feed Stuff

Alfalfa meal	15.00
Bran, ton	28.00@30.00
Feed cornmeal, ton	38.00@39.00
Cracked corn	38.00@39.00
Rolled barley, ton	32.00@33.00
Rolled oats, ton	31.00@32.00
Middlings	32.00@34.00
Oil cake meal	42.00@43.50
Cocoanut cake, ton	24.00@25.00
Mixed feed, ton	25.00@27.00
Shorts	29.00@30.00

Deciduous Fruit Market

Sacramento, August 26, 1911.

Manager F. B. McKevitt of the California Fruit Distributors reports:

The following gives the number of cars of deciduous fruit shipped from all points in California for the week (seven days) ending Friday morning, August 25, 1911:

Peaches—223¾ cars. Shipment of this variety shows a falling off of practically forty cars since last week. The decline will be even greater during the week to come. Salways will not be available in any quantity until about the 5th of September, although it may be possible to get a few carloads before that time. Not many Clings are available owing to large purchases of this stock by canners.

Plums—145 cars. This variety shows an increase in shipment from last week which was entirely unexpected by the trade. It is probable there will be a sharp decline during the coming week. Grand Dukes are nearly done and there are not very many Kelseys available.

Pears—268¾ cars. A decline is noted in the shipments of this variety, about the same as last week. The most important shipping sections have now finished on Bartletts and shipments should show a material decrease from this time on. Vacaville and Suisun are nearly done—most of the remaining stock will be sent from the mountain districts.

Grapes—301½ cars. The shipment of Thompson Seedless is now concluded. Malagas are going forward in considerable quantities and the shipment of Tokays is on the increase. It is expected that a few cars of the latter will be shipped from the Lodi and Florin Districts during the coming week, but there will be no considerable quantity to offer until after the first of September. A limited number of cars of Black Prince are still available.

Weather conditions are fine.

Comparative Statement of Shipments.

	August 19, 1910	August 19, 1911
Cherries	250½	216¼
Apricots ½	289¾	214½
Peaches	1807	1550
Plums	1536½	1145½
Pears	1985½	1516¾
Grapes	765¾	510½
Apples	146	3
	6781	5156½

Citrus Fruit Market

LOS ANGELES, Aug. 30, 1911.

There has been practically no change in condition of the market. The heavy crop of Eastern deciduous fruit offered still shows its effect on Valencia sales, but shipments are beginning to go out a little heavier, amounting to about 25 cars daily.

Shipments.

Shipments of oranges to date since November 1st, 1910, 35,439 cars, lemons

Cream Separators, all sizes and prices. Guy F. Kelsey & Co., 106 East Eighth St., Los Angeles, Cal.

6,121 cars, total 41,560. To same date last season: Oranges 24,385 cars, lemons 3,254, total 27,639.

NEW YORK, Aug. 28.—Twelve cars Valencias, one car lemons and one car grapefruit sold. Market higher on large sized Valencias, easier on small sizes. Market higher on lemons. Fair and warm.

VALENCIAS—	Avge.
Conqueror, xc, Ind. Ft. Co.	$2.80
Freedom, xc, Ind. Ft. Co.	2.00
Whittier, S. T. Ex.	4.15
Glendora Heights, fy, A. C. G. Ex.	4.35
Glendora Heights, ch, A. C. G. Ex.	3.65
Evolution, A. C. G. Ex.	2.90
Red C, Covina Ex.	3.15
Cougar, Covina Ex.	2.55
Alhambra, S. T., Alhambra	2.45
Fiesta, Riv. Ex.	2.90
Billiken, Riv. Ex.	2.15
Squirrel, A. H. Ex.	2.05
Palm Tree, A. H. Ex.	1.80
Navajo, A. H. Ex.	2.15
Titus Ranch, fy, San Marino G. P. A.	4.00
Old Mission, fy, Chapman	5.65
Old Mission, ch, Chapman	4.90
Golden Eagle, sd, Chapman	3.85
San Rafael, H. W. Bailey	3.70
San Pasqual, H. W. Bailey	2.65
Flower, Growers Ft. Co.	2.50
Twin Peaks, Growers Ft. Co.	3.95
White Cross, Growers Ft. Co.	2.95
Stock Label, High. Prot. Ft. A.	1.75
Delicious, High. Prot. Ft. A.	2.70
Corona, National O. Co.	4.00
Corona Stds., National O. Co.	3.10
GRAPEFRUIT—	
Squirrel	$1.20
Palm Tree	.80
HALVES—	
Mahala	$1.50
Swastika	.90
Corona	1.75
LEMONS—	
Coyote	$2.40

BOSTON, Aug. 28.—Five cars sold. Cool, cloudy. Market doing better on oranges—unchanged lemons.

VALENCIAS—	Avge.
Pointer, A. C. G., Azusa	$2.85
Tunnel, S. T. Fernando	3.65
Glendora Heights, xc, A. C. G., Glendora	3.60
Robusta, A. H. Pachappa	3.55
Hobo, A. H. Pachappa	2.55
Hobo, L. A. H. Pachappa	2.35
Rey, S. T. Fernando	4.55
Urchin, S. T. Fernando	3.05
Evolution, A. C. G. Glendora	2.75
Robusta, K. A. H. Pachappa	4.15
Hobo, K. A. H. Pachappa	2.95
LEMONS—	
Las Fuentes, Crocker-Sperry Co.	$3.95
Monticito, Crocker-Sperry Co.	3.25

PITTSBURGH, Aug. 28.—Four cars sold. Market easier on oranges. Steady on lemons. Warm, cloudy.

VALENCIAS—	Avge.
Red Shield, A. C. G. Azusa	$3.25
Searchlight, S. S. Orange	2.20
Pointer, A. C. G. Lateen S.	2.60
Possum, A. C. G. Lateen S.	2.05
El Azar, A. C. G. Azusa	2.70
Sunset, S. S. Orange	2.15
Hunter, A. C. G. Lateen S.	2.05
LEMONS—	
Laurel, Q. C. Corona	$3.40
Lily, Q. C. Corona	2.70
Princess, Q. C. Corona	2.80

CINCINNATI, Aug. 28.—Warm, raining. Market steady. Two cars oranges, two cars lemons sold.

VALENCIAS—	Avge.
Pointer, A. C. G. Azusa	$2.55
Pet, S. A. Ex.	2.90
Hunter, A. C. G. Azusa	2.40
El Capitan, S. A. Ex.	2.80
LEMONS—	
Rough Diamond, V. C. Haines Spur.	$2.10
White Cross, V. C. Haines Spur.	3.40
National, xc, or, E. Peycke Co.	2.35
Bridal Veil, V. C. Haines Spur.	3.85
Bonanza	2.95

CLEVELAND, Aug. 28.—One car Valencias, one lemons sold. Market unchanged on Valencias. Prices low on lemons account quality and condition. Raining.

VALENCIAS—	Avge.
Red C, Covina Ex.	$3.15
LEMONS—	
Queen Alexandria	$2.85
Spanish Girl, A. H. Arlington	1.90
Commercial, A. H. Arlington	1.00

PHILADELPHIA, Aug. 28.—Three cars Valencias sold.

VALENCIAS—	Avge.
Stag, A. C. G., Charter Oak	$4.70
Hunter, A. C. G., Charter Oak	2.45
Martha Washington, S. S. Tustin	2.75
Pointer, A. C. G., Charter Oak	2.70
George Washington, S. S. Tustin	2.65
Golden Orchard, Ind. Ft. Co.	3.70
VALENCIAS—HALVES—	
George Washington	$1.50
Martha Washington	1.25

ST. LOUIS, Aug. 28.—Clear, cool. Market strong on large size Valencias. Three cars sold.

VALENCIAS—	Avge.
Searchlight, S. S. Orange	$3.80
Sunset, S. S. Orange	3.15
LEMONS—	
Moose, O. K. Ex.	$1.85
Prong Horn, O. K. Ex.	1.55

LIKES THE MEADOW LARK.

Speaking to a reporter of a daily paper regarding California birds, John Burroughs said:

"No, I don't like your mocking bird or any mocking bird so very well. Oh, yes; he performs most wonderful feats but he is only a vocal gymnast—an actor. He is too theatrical to suit my taste. I have seen him in Jamaica, Florida and elsewhere and he is always the same plagiarist. His is not a serious song like that of the thrush. His ways are disagreeable, too. He is continually flirting and preening and lacks in dignity.

"Bird songs, of course, are often made dear by association, and the mocking bird has been surrounded by much to endear him. Compare his song with that of the meadow lark.

"I would exchange meadow larks with you. Yours in the West has a sweeter song. Our eastern meadow lark sings ecstatically 'Spring of the Years.' Yours has not been put to words yet for me. It is beautiful and comes bubbling up in a wonderful ripple of melody from the little bird's soul. No mocking bird song in that."

"Really, I like the blackbird's squeaky little song because it is his own. The blackbirds here are very interesting. They are so glossy and black, so well groomed, such high steppers and show such friendliness.

"I have not seen many robins here. A few on the lawn are about the same as our eastern robins. There is also a pretty thowing, a finch, that's like our chewink. The chewink, though, is more brilliantly colored.

"One of the most interesting birds I have seen," continued the bird lover, "is the Pasadena thrasher—that is the name that was given to me. It acts like a mocker and has a long flexible tail. He has a hooked beak and when he hooks for insects he makes the dust fly. I call him a muckraker.

"At Mt. Wilson I made acquaintance with a pretty bird, the purple marten—a bird with a rich warble.

"Your bluebirds are beautiful. There are the mountain bluebird and the Arctic. The latter especially is like a flash of blue sky. There are plenty of jayhirds in your mountains and they are very handsome.

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It will be an interesting feature of your visit to San Francisco to examine the great variety of pumps shown here for every possible service and for every possible use.

All visitors to San Francisco are cordially invited to meet the representatives of the Dow Pumping Engine Co. at this place.

Kern Meadows Land & Water Company will begin operations this week upon its property in Kern County. F. M. Bartell left several days ago with stock, and farm implements have been shipped to begin immediate operations upon an experimental farm. Ditch grading machinery has been purchased and will be in operation very soon upon the distributing system to carry the artesian water over the property. This work will be in charge of Herbert E. Carse, consulting engineer. The wells have been flowing for many years, the water running at random over the land and making dense jungles of tule and grass. The wells will be capped and the tule land placed under cultivation. The experimental farm will be devoted to determination of crops and deciduous trees best suited to soil and climatic conditions. The lands have not been under cultivation for a number of years, but foxtail in abundance, large gum trees, pomegranates, grape vines with trunks four to six inches in diameter and olive trees twelve to fifteen feet in height loaded with fruit give evidence of the possibilities. The land is now being rented and the whole 10,000 acres will be placed under cultivation as soon as possible.

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A centrifugal pump consists of a rapidly revolving runner or wheel turning inside a casing. The water is led in to the impeller, corresponding to the spokes, at the hub and is thrown outward by centrifugal force.

Avoid a pump with many complicated water passages. Be sure the shaft is strong enough to withstand the belt pull. Be sure it is in perfect mechanical balance. Do not accept a pump that vibrates when running at full speed. This is particularly imperative with a direct-connected pump. There is a strong tendency in the pump runner to pull to one side. This is called end thrust and a pump that is designed to remove this thrust is said to be hydraulically balanced.

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Centrifugal Pump

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Wherever possible, buy a direct connected pump. The first cost is not materially greater when you consider the extra cost of belting, foundations and belt-way. Direct connected pumps take less power to operate them, for at least fifteen per cent of the power is consumed in the belt. In many cases a new belt is required each year, no small item of expense. It is important that the manufacturer know the exact height the water is to be pumped before your order is placed, as direct-connected pumps are always made to order. This also means that a little longer time will be required for delivery. Buying from a reputable firm is even more important in this instance.

The best way to be sure of getting an efficient pump is to buy of a reputable firm which has had long experience in building pumping machinery.

To sum the whole matter up, get a simple pump without any fancy automatic devices, with strong bearings and a shaft of ample size and with its weight well distributed, and then buy from firms who are experienced pumping machinery builders.

—Town and Country Journal, Aug. 15, 1911

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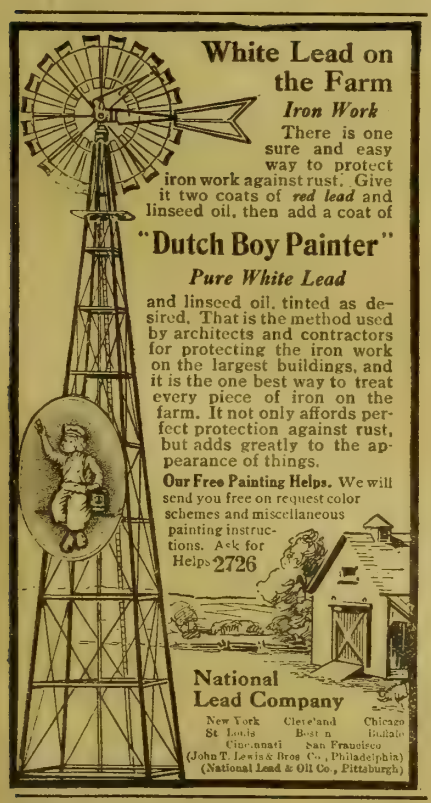

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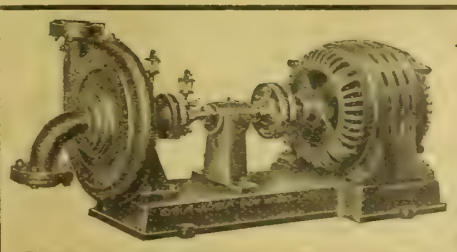

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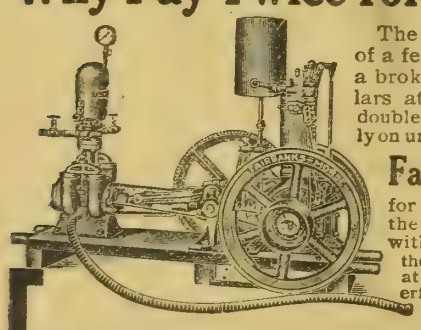

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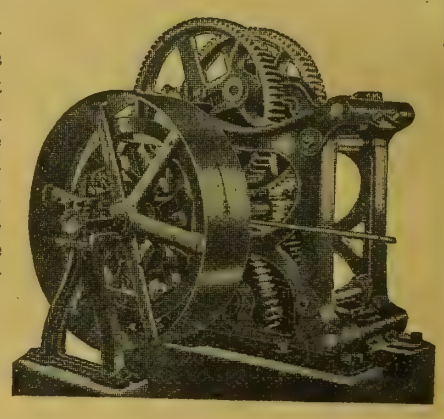

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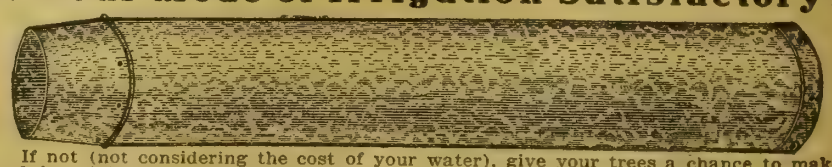

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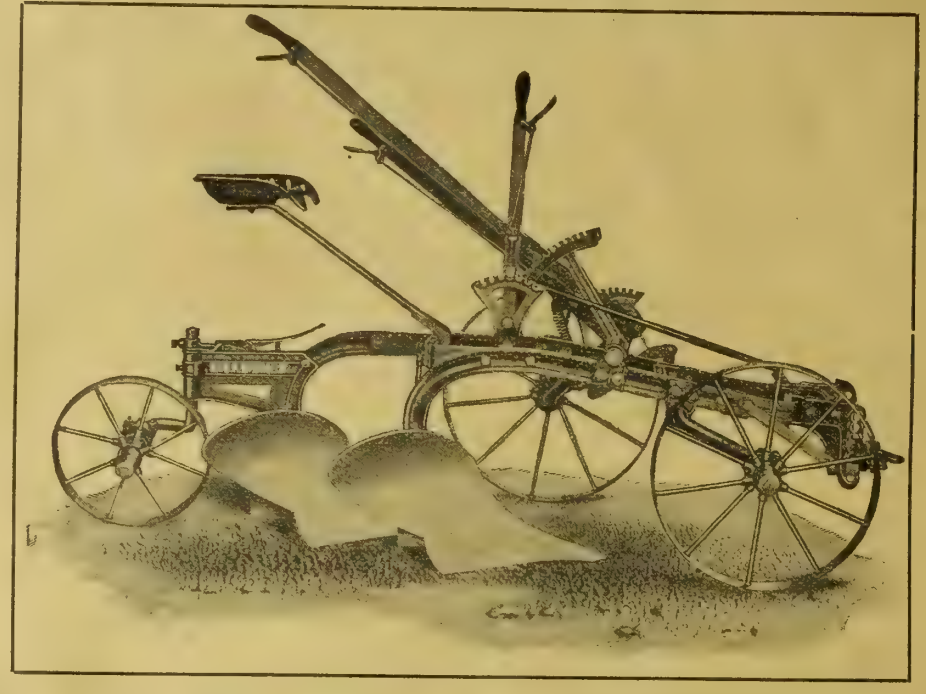

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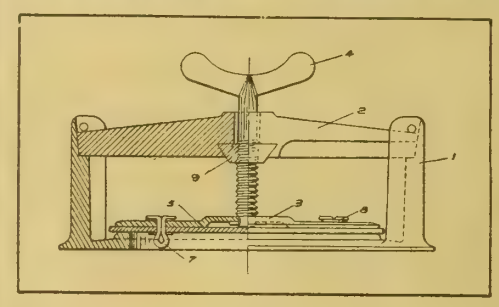

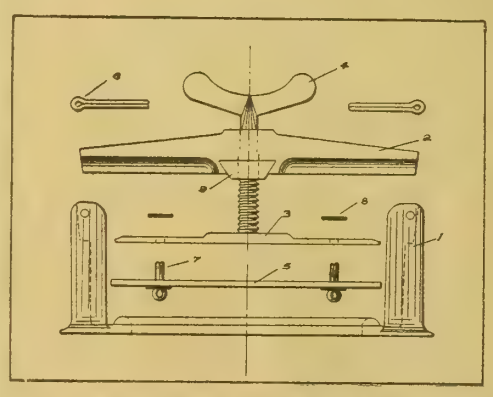

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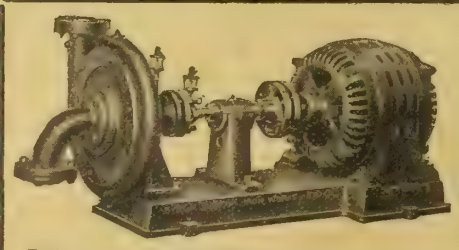

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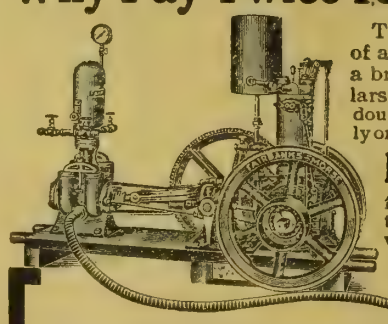

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Vol. XXXVII. No. 10. LOS ANGELES: THURSDAY, SEPTEMBER 7, 1911 One Dollar the Year

The Gravenstein Apple Show at Sebastopol

Editorial Correspondence from Sonoma County Gives Condensed Report of Great Show of One Variety of Apple.

"Gold Ridge" is a name which carries one back to mining days and suggests a soil rich in the glittering yellow metal. It reminds one of the feverish hunt for gold in the days of '49 and for many days thereafter. The hunt still continues and the Gold Ridge located in Sonoma County a few miles west of Santa Rosa is proving remarkably rich in yellow gold. The process of its manufacture is roundabout; the name is not given because of a deposit of metal but because of the richness of the soil from an agricultural standpoint. This was recognized in 1892 and at the suggestion of a Sebastopol woman the name was applied to a range of hills running north and south of that thriving little city. On an edge of this ridge are Sebastopol, Stony Point, the Pleasant Hill country, Forestville and Graton.

More than 100 years ago the Russian immigrants locating along the northern coast of California, brought with them scions of the Gravenstein apple. These, with many other fruits were there planted on the rich hillsides. For many years the excellence of the apple in that section was noted, but only within a very few years has its commercial importance been appreciated. The Gravenstein has the advantage of being an exceptionally early fruit of the very highest quality. Some enthusiasts have gone so far as to say it is "the best apple on earth." In any case, the unbiased judge must admit it is reasonably good.

Something over a year ago certain boosters of the Sebastopol section decided that the merits of this excellent apple should be given wider publicity, and to that end a movement was started to enthrone King Gravenstein for one week. This resulted in a remarkably successful apple show, probably the first in which one variety of apple was used in the exhibitions. The success of this show called for a repetition, this year, and the week ending August 26th the second exhibition was given.

The most noticeable thing on entering the tent was the delightful Gravenstein aroma which filled the atmosphere as does the orange blossom during the month of March. The exhibits were arranged around the outside of the tent built especially for the association, with two banks of exhibits through the center. Of carload entries there was only one, but the fifty-box competition drew out several of the very highest grade. Many apologies were made for the lack of coloring which is one of the features of the Gravenstein. In order to color up the fruit as much as possible a week's delay was made in the opening of the show. While the fruit was not so highly colored as in former years at the same date, the quality was of the very best, but we note that the fruit belonging to Mrs. Hunt which won the first prize was of the very highest color of any exhibit of the same size. This award was a tribute, in part at least, to the color, though it must be confessed that the uniformly good size, together with high quality and regularly sized fruit, made the decision of the judges unanimously acceptable to all who saw the exhibition. The exhibits of commercial pack did not take with the general visitors as did the feature exhibits. Here ingenuity and artistic taste joined in producing remarkably novel and interesting effects.

A Sonoma County Gravenstein Orchard.
Courtesy Sebastopol Times.

The first prize winner and one of the most striking of the feature exhibits was immediately in front of the main entrance. It was a large reproduction of the steamer Gold, an old time vessel which plied between San Francisco and Petaluma, excepting as to its framework, entirely in apples. The reproduction was made most real by the motion of the paddle wheels kicking up a great froth in the real water in which it floated. Around the miniature lake was a bank of growing grass, and a flock of ducks added reality to the scene. On the steamer's deck were boxes of apples going to market. This was exhibited by the people of the Pleasant Hill district. Stonypoint carried off second prize for its old water wheel, a mammoth wheel ten feet or more in diameter, kept in constant motion by a very real waterfall, continually grinding out a stream of Gravenstein apples and pies. But a description of all the exhibits would weary the reader who was not so fortunate as to see them, and would take more space than is at our command, but we can say in a general way that it was one of the prettiest arranged little shows we have ever seen. Almost every exhibit was executed perfectly. One of the most attractive was that of Luther Burbank in which he showed a large number of his more recent productions. It will be recalled that Mr. Burbank's home is at Santa Rosa, seven miles from Sebastopol, and his principal experiment grounds are just at the entrance of the city. Mr. Burbank saw many years ago the richness of Sonoma County's soil and the abundance of moisture retained, and determined to make it the scene of his work, the influence of which is world wide.

The main tent in which the exhibition was held is 110 by 260 feet with an annex 30 by 200 feet for concessions and orchard appliances. Several of the noisier, like the spraying outfits, were located in the grove immediately back of the tent.

Regarding the association and its work Mr. E. F. Jewell, the secretary, supplies us with the following information:

"The Gravenstein Apple Show Association held its first show in August, 1910, which was the result of considerable talk and argument on the part of a few of the boosters of this section. We knew what we possessed in the way of fruit and vegetable products that were in great demand, and decided that we would present them in some manner before the people of other parts of this great state as well as the United States. The manner in which to accomplish this purpose was next to be considered, and after considerable argument and planning on the part of those interested, it was finally decided to give the Gravenstein Apple Show, this being our leading product.

"Immediately following the decision, we began to act. A meeting of the growers and citizens of this section was called, at which time a board of directors was elected as well as the officers, who at once started in upon their duties to put up our first show. This first meeting was called in May, which only left us three months in which to complete arrangements, and on account of the work being new to most of us, we found it to be quite an undertaking. However, the date was set for August 10th, and at the time appointed, the displays were all complete, and our first Gravenstein apple show was ready to receive the criticism of the public.

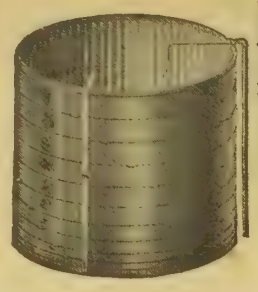
"The great success of this show decided us in making it an annual fair. We at once incorporated, and proceeded in a business-like manner to carry out our plans."

J. P. McDowell is president, and the other directors are: A. B. Swain, W. I. Newcomb, F. W. Maddocks, J. W. Turner, Geo. D. Sanborn, Charles E. Hotle, E. E. Morford, Henry Elphick, J. P. Kelly, W. W. Monroe, George McFarlane, H. R. Harbine, J. J. Alves, L. V. H Howell, E. H. Brown, secretary of the Sonoma County Chamber of Commerce, is director-general of the show.

Sure it is the show succeeded in attracting attention of a great many people to Sonoma County. The attendance was most liberal during every day of the show, and visitors were present from many counties from Los Angeles to Shasta. Watsonville boosters were in evidence and were received with a glad hand by the Sebastopol people. The Apple Annual people want it understood that they have greatest admiration for the Sebastopol show but were more than anxious for all to come to the next Apple Annual to see the Bellflowers, Newton Pippins, and Winter Pearmains show forth their greatest beauty.

Regarding Sebastopol and its Gravensteins, Mr. Geo. D. Sanborn writes us:

"Sebastopol is located seven miles west from Santa Rosa, the County Seat of Sonoma County. It is a bustling incorporated little city of some 2000 population, and is the hub of the Petaluma and Santa Rosa Electric road, as well as having direct communication with San Francisco over the Northwestern Pacific railroad. The apple industry is assuming, and has already reached vast proportions here. The soil and climatic conditions seem to be as near perfection for the production of all kinds and varieties of apples as can be found in California, if indeed not in the world. The Gravenstein is the best and most delicious of all apples and is produced to greater perfection at Sebastopol than elsewhere on the Pacific Coast. The area that will produce this apple to its perfection is limited here, yet there is much of this area that has not yet been planted to apples, and there are many hundreds of acres here in young apples of various ages that have not yet reached the bearing point The industry is growing very fast and there is absolutely no danger of overproduction of the Sebastopol Gravenstein for the reason that the area is limited, and from the fact that the Sebastopol Gravensteins are about four weeks earlier than those raised in any other portion of the Pacific Coast. They absolutely cannot compete in the markets with the apples of this variety raised here for the reason that they are hanging on the trees green, while Sebastopol is marketing her crop at big prices."



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PROPER PRUNING OF THE ORANGE TREE.

Regarding pruning of the citrus T. R. Wallace writes in the Florida Agriculturist:

Pruning is a phase of orange culture which receives meager attention by the grower, and yet is one of the important details. It is usually discussed in a very general way and with a sort of tacit acceptance of the theory that evergreen trees do not need pruning except to remove accumulations of dead wood. The writer's study of the subject has been through direct experiment and in closely observing the experiments of others, and the object of this study is to find what methods of culture must go hand in hand with the use of fertilizers to obtain the most desired results with reasonable certainty. The direct issues in mind were quantity and quality of fruit, and the striking fact that, in the attempt to produce quantity by direct fertilizing, an abundance of fruit wood was evolved which went dead instead of producing fruit. This dead wood being invariably found inside the tree, the investigations naturally led to the study of that part.

Presuming that in a suitable soil and climate we have an orange orchard on healthy root, and that the trees are kept healthy by proper soil fertilization (which simply means correct farming,) and we are feeding the trees with useful fertilizers to insure steady and desirable fruiting, can we by pruning enhance the value of our crops? I answer that we can.

The inclination of the citrus trees after a few years is to grow top, and the top usually forms like a pyramid over the center of the tree, shutting out the light and air from the center or inside of the tree. This deprives the tree of considerable bearing surface inside and the crop is borne mostly on the outside. As this becomes habitual, even though we fertilize ever so cleverly to produce fruit wood, the interior fruit wood dies from simple inanition, and practically the bearing of inside fruit stops. This cannot be corrected by simply cleaning out the interior of the tree nor by thinning out fruit wood from the side. The letting in of light and air through the sides of the tree is of no important value, and indeed the denser the foliage of the sides the better protection the outside fruit will have from winds and severe climatic changes.

Practically the pruning of the orange tree consists in removing the branch reaching up and enclosing the center-top and the opening out of the center so that the air and light can freely descend upon and into the cup-top thus produced. This permits the tree to prepare and nourish an inside rim or surface of fruiting wood, and to bear fruit on it. Practically that provides two fruiting surfaces, an outside and inside. The taking out of the top allows more strength to concentrate in the lower sides and they become rich and strong to the ground, so that they not only produce more fruit, but afford their crop more protection by dense foliage. Thus an increase in both quantity and quality is effected. But this is still further augmented by the crop grown inside. This inside crop is as well very superior fruit for packing, as it is protected from the wind, and as well there is always a sufficient thin foliage swinging over the inside rim of the cup to protect from sunburn.

In such pruning only the saw is required, and care must be exercised to cut all limbs fully back to the eye, and no limb should be nipped or cut on any part of its length or between buds, as in such case it will either die back or sprout like a broom. This method of pruning is not expensive, and can be done very quickly by anyone who can handle a saw properly. It cannot be done periodically every few years, but each year the trees should be gone over. The first year it will be found that but one, two or three limbs can be profitably and safely removed.

The next year another limb or two can be removed, until the proper inside shape and healthy fruiting wood is produced. The increases both in quantity and quality of the crop will more than offset the seeming loss of crop suggested by removing the central limbs reaching up into the top.

NOTES.

California soils, though often very fertile, are generally deficient in humus.

The only places where green manures are being used extensively are the citrus and walnut orchards of the southern part of the state.

By the use of green manures a generally improved condition of orchards has been secured, as shown by a more healthy appearance of the trees and more and better fruit.

The early seeding of green manure crops is desirable for obtaining the best results.

Green manures should be turned under before the trees start new growth in the spring.

Heavier seeding than is ordinarily practiced is advised.

Common vetch and field peas are the most generally used green manure crops, the vetch being the most popular.

Peas or common vetch sown in the fall without irrigation will not, except in the most favorable years, make a sufficient growth to be turned under early as a green manure, but when thus sown will make a good growth later in the spring.

Bur clover seems to be of most value for deciduous orchard conditions, while the woolly-podded vetch promises to be of value for the same conditions.

Green manure crops need no inoculation in California, horse beans in the northern portion being the only known exception.

The growing of a summer green manure crop in California orchards is not advisable.—Bul. 190, Bureau Pl. Industry, U. S. Dep. Ag.

COVER CROP SEED PER ACRE.

Green manure crops used in California in their order of importance are: common vetch, Canadian field peas, bur clover, fenugreek, hairy vetch and Indian melilot. The amount of seed per acre is approximately:

Vetch (Vicia sativa)	40-60 lbs. per acre
Canadian field peas	80 lbs. per acre
Bur clover (hulled)	20 lbs. per acre
Fenugreek	30 lbs. per acre
Hairy vetch (Vicia villosa)	45-50 lbs. per acre

NOTICE

To Users of

FUMIGATION CYANIDE

Quality is the Important Consideration

Do Not Be Deceived

Should someone offer you so-called Cyanide of Potassium at a price below the market, it is safe to assume that it will prove to be a

Low Grade Sodium Cyanide

carrying from 7% to 15% of Sodium Chloride. **Such cyanide bears no manufacturer's brand or label.**

It is Your Right to Receive an Analysis

The new State Law governing the sale of insecticides and fungicides provides that an analysis be printed or pasted on each case or package of such material. This law was framed by the agricultural department of the University of California; you should receive the protection it is intended to afford. INSIST ON AN ANALYSIS.

If any doubt exists of the correctness of analysis furnished you, send a sample of the material to the Agricultural Department of the University of California, which will analyze it for you for the nominal fee of $1.00.

Fumigation with Cyanide involves a heavy outlay of money and (when inferior chemicals are used) too great a risk as to the effect on citrus trees, and the condition of the fruit, for any grower to remain uninformed on this subject, when authentic facts compiled by the United States Department of Agriculture may be had on application.

Bulletin No. 90, parts 1-2-3, of the United States Department of Agriculture, Bureau of Entomology, on "The Fumigation of Citrus Trees," "Chemistry of Fumigation with Hydrocyanic-Acid Gas," "The Value of Sodium Cyanide for Fumigation Purposes" are publications which should be read by all growers who have any interest in the extermination of the several varieties of scale.

READ WHAT PROF. R. S. WOGLUM OF THE UNITED STATES DEPARTMENT OF AGRICULTURE SAYS:

"Past experience in this state with a 98-100 per cent. SODIUM CYANIDE has proven unsatisfactory. Why? I will tell you the reason.

Chemical analyses have shown that practically all commercial potassium and sodium cyanide contains more or less common salt, which is technically spoken of as sodium chloride. The action of this salt in connection with fumigation demands consideration. It has been found that when sodium chloride is present in the reaction of sulphuric acid on a cyanide in the production of hydrocyanic acid gas that this chloride salt produces a secondary reaction which liberates an acid called hydrochloric acid; that this liberated hydrochloric acid immediately attacks the liberated hydrocyanic acid gas and decomposes it to a great extent. Hence, as the presence of sodium chloride in a cyanide produces a partial decomposition of the hydrocyanic acid gas when liberated, the ultimate result is that less gas is given off than from a cyanide of the same degree of purity which is free of it. The extent of the decomposition depends upon the amount of sodium chloride present. That this might be great is shown by the results of one experiment performed by the United States Bureau of Chemistry in which the decomposition amounted to little over 92 per cent of the total gas, only a little over seven per cent being evolved."

CONDEMNED AS UNFIT FOR USE.

"The results of these experiments bring to our attention a second consideration in the purchasing of a cyanide. That a cyanide be of a certain grade of purity is no longer the only consideration.

"It is of equal importance that the cyanide be practically free of sodium chloride. **I would condemn as unfit for use in fumigation any cyanide containing in excess of one per cent of sodium chloride.** Returning to the high grade sodium cyanide, it was found that this as well as the high grade potassium cyanide, contained only a fraction of a per cent of sodium chloride. It generally can be held as a safe consideration that a cyanide approaching chemical purity will contain not more than a trace of sodium chloride and that such a cyanide generally can be safely used, even though the degree of cyanide purity is alone known. I would consider as generally satisfactory for fumigation, a potassium cyanide 96 per cent or above, or a sodium cyanide 124 per cent or above. Chemicals of lower purity should never be used. Preferably the grade demanded should be a little higher than that given, or a potassium cyanide 98-99 per cent."

The Kind of Cyanide to Use

The Roessler & Hasslacher Chemical Co.'s Guaranteed Cyanide of Potassium (98-99 per cent) and High Test (128-130 per cent) Cyanide of Sodium are manufactured expressly for fumigating and contain no reactionary chemicals. The manufacturers of this material have studied the requirements necessary to produce definite and dependable results.

IT GENERATES QUICKLY, affording the required degree of density of gas under the tent.

CONTAINS NO CHLORIDE OF SODIUM, insuring the highest efficiency and maximum evolution of Hydrocyanic acid gas.

F. W. BRAUN

363-371 New High Street, **Los Angeles, California**

DISTRIBUTING AGENT OF

The Roessler & Hasslacher Chem. Co.'s Special Fumigatiug Cyanides

Packed Only in 200 Pound Cases

Could You

have made money by investing in **Southern California** lands a few years ago?
The chance is here again, in the

State of Sinaloa "the California of Mexico"

where the **finest** of silt lands, with lots of water at a shallow depth, are selling at $20 and $25 an acre, on easy terms. Common lands at a lower price.

An average rainfall of 30 inches, 85% of which comes in July, August, September, and October, insures one crop without irrigation,—two or more by installing small pumping plants.

Climate in many ways superior to that of Southern California.

Transportation by **Rail and Water.**

Home markets for corn, beans, cotton, alfalfa, hog and dairy products Foreign markets for winter vegetables and tropical fruits, which net from $100 up per acre. It will pay you to investigate before paying high prices elsewhere.

Illustrated book free

This cut shows depth of soil on our lands. Note the beautiful growth and the broad level valley.

Ben W. McCloskey & Co.

Offices 305-306 Union Trust Bldg. Los Angeles, California and **Culiacan, Sinaloa, Mexico**

To the Water Well Owners and Drillers of Southern California

We beg to introduce ourselves and ask for a chance to prove worthy of your permanent confidence and patronage.

We have found that with some additions, the complete line of oil well supplies which we carry at Los Angeles and in our branch stores, is admirably adapted to supply the needs of the water well trade, and we are entering this field with all the vim and vigor which have built up our immense oil well business in the past five years.

If you are in need of an engine, pumping outfit, casing, belting, tools (small or large), pipe, fittings or supplies of any kind, we will be more than pleased to serve you. You will find our goods of the better grade only, our delivery prompt, and our prices the very lowest, consistent with first quality.

We will take pleasure in supplying any quotations or other information you may desire and will appreciate an opportunity of making your acquaintance.

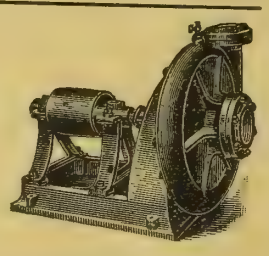
Ask for our special bulletins on water well supplies. Mailed free.

J. F. LUCEY CO.

Water Well Dept. 1493-9 E. Sixth St., Los Angeles.

Waterloo Boy Gasoline Engine

PUMPS



Centrifugal Pump

Send for special catalogue. We can make you the right price on Waterloo Gasoline Engines and Centrifugal Pumps. Each Engine and Centrifugal Pump Guaranteed

Pyramid Pump

Woodin & Little Pump House

33-41 Fremont St. - San Francisco, Cal.

Pumps for Every Service and Use
Gasoline Engines, Windmills, Tanks
Pipe, Pipe Fittings, Brass Goods
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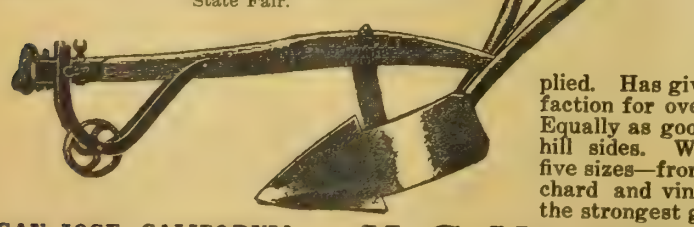
THE BEST IN THE WORLD; HAS NO EQUAL

The Original R.I. Knapp Side-Hill Plow

Orchard and Vineyard Plow received first premium at State Fair.



If you cannot get our plow send us the name of your dealer and we will see that you are supplied. Has given entire satisfaction for over thirty years. Equally as good for valley as hill sides. We manufacture five sizes—from one-horse orchard and vineyard plow, to the strongest grading plow.

SAN JOSE, CALIFORNIA **H. G. KNAPP & SON**

Tell us where you saw this advertisement

Deciduous Fruit Culture

DYNAMITE THE LATEST AID TO FARMING.

The latest development in agriculture is the use of dynamite. At first thought this word makes the ordinary soilworker shudder, but there is nothing about this high explosive to cause the least fear. In fact, it is the farmer's friend and the farmers who make early use of it in their field work will have a distinct advantage over those who wait a score of years to find in the end that progress demands that they use it.

Many look upon dynamite as they do upon lightning. They think both uncontrollable. This is a serious mistake. Dynamite is neither treacherous nor uncontrollable, but is dependable and tractable. It is its dependable and tractable qualities that make it so valuable. Once one has gained the knowledge of how to use this substance and knows its power, there is not the slightest danger in its use by careful and thoughtful persons. It can be handled and used just as safely as gasoline, kerosene or any other of the many substances that have either great power and energy in themselves or the ability to develop that power and energy in other substances. The energy of dynamite can be directed in the work to which it is adapted just as well as the energy of steam can be directed, in the work for which it is used. With this view in mind one can easily understand how serviceable and economical dynamite is in the heavy work necessary to modify, conform or perfect any piece of land that is not up to the agricultural standard.

The work done by dynamite is accomplished by the sudden transformation of a relatively small volume of solid material into a very large volume of gas. To secure the greatest execution and economy the dynamite should be confined as closely as practicable. Dynamite will show considerable effect if exploded in the open air, but its efficiency is increased many times if it is closely confined in the bottom of a bore hole by packing damp clay compactly above it to the surface of the ground.

For years dynamite has been used in the West for many farm purposes, but its use during that time has been limited almost wholly to that region. We have waited long for the perfection of dynamite to a state where it could be safely used on farms generally, and for a sufficient tryout to prove its feasibility under all conditions. Both have been realized.

There are three ways of blasting those great boulders in your cultivated fields that have caused the ruin of so many plow shares and the utterance of hard thoughts as the plow handles tickled your ribs. The easiest is to press a number of cartridges of dynamite into a compact mass against a flat or hollow side of the boulder, cover this over with a coating of plastic clay, and then explode it. If sufficient dynamite is used the boulder will be broken into many pieces, but much more dynamite is required to break it in this way than would be necessary if the charge were confined against the under side of the boulder in the bottom of a hole made with a pointed crow bar. Still less dynamite will break it in pieces if exploded in holes drilled into the boulder itself.

Equally as detrimental to cultivation and good husbandry in general is the presence of old stumps and worthless trees in the tillable areas, brush and second growth in the pasture and dead and dying trees in the orchard. These can be disposed of quickly by making one or two holes with a pointed bar well down under the roots and exploding a cartridge or two of dynamite in each hole. In such a case all of the dynamite used should be exploded simultaneously, so when it is loaded in more than one hole the charges should be connected up electrically. After the stump or tree is uprooted it can be quickly split into firewood by boring a few auger holes half-way through it and exploding a small quantity of dynamite in these.

Every little dry spell has its telling effect upon crop production. There is just one reason for this and that is the shallowness of the top soil and the hardness of the subsoil.

For years and years the plow has been run to the depth of the top soil, causing the upper portion of the subsoil to become a cemented, impenetrable hardpan, impervious to water as well as the roots of plants. The crops growing in such soils cannot send their roots down into the subsoil to secure the moisture, food and coolness below, but must grow solely in the few inches of soil that overlays the hardpan. In a time of continuous rainfall this upper stratum of earth soon fills with water, and since there is no outlet below the surplus water must run off over the surface, causing washing and transporting of the plant-supporting earth, while in a time of dryness the entire root system, being but a few inches beneath the surface and unable to penetrate the subsoil, suffers severely.

The subsoil on many farms runs so close to the surface that profitable crop production is almost impossible on these areas. To materially deepen them is impracticable with the plow for the plow turns the subsoil to the surface and this if present in large quantities, seriously interferes with plant growth. It is right here that dynamite has its greatest use in our practical farm operations, for when it is properly used it can be made to crumble and shatter this impervious subsoil to admit the plant roots without bringing the subsoil to the surface to interfere with the growth of the crops. The result of breaking up this subsoil is that the moisture-absorbing and moisture-holding soil is increased from a few inches to five or six feet immediately with no harmful effect on the present crop to be grown nor those that succeed it. Many other benefits are derived from this breaking up of the subsoil aside from its regulation of the moisture supply, principal among which is that the feeding surface is increased a hundred fold, the plants can get a better grip on the soil and the locked-up plant food is made available to the crops.

In blasting subsoil holes are drilled with a dirt auger or pointed bar from two and a half to five feet deep, according to soil conditions. These are spaced from fifteen to twenty feet apart, and a quarter of a pound of a slow-acting dynamite exploded in the bottom of each hole. By packing the hole tightly the entire effect of the explosion can be kept below ground without disturbing the surface to any great extent. The cost of subsoil blasting including labor does not exceed an outlay of more than fifteen or twenty dollars per acre.

A BARGAIN

5 H. P. Fairbanks Engine as good as new. Will install with pump. Address

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Sunset West 2585 **Consulting and Construction Engineer** 1473 W. 37th Place
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Golden West Varieties of Fruits, Roses and Flowers

Our new Catalogue tells all about them. Our great new Commercial Apple, our extra early and fall bearing Strawberries, sell for fancy prices. Agents wanted everywhere. Special chance for reliable party to invest a few hundred or a few thousand dollars and learn the management of Nursery and Orchard. Permanent, pleasant work as salesmen or practical Nursery and Orchard work—the best business in the great West. Write us at once for particulars about our Nursery and Orchard development. Also about selling trees and plants in your own locality. Address—

North American Nursery Co.

ENGVOLSEN BROS., Proprietors **Port Angeles, Washington**

The California State Fair

A Good Exhibit, Fine Races and Some Features Not Admissable

With a $10,000 prize hung up on a single race at the state fair which closed in Sacramento last Saturday night, it may be imagined that the two monster grandstands were crowded during that event with an enthusiastic noisy throng. The boxes were filled with society people of all California, judges of various courts, and even the Governor himself smiled on the proceedings. This event was on Wednesday, and the preceding day had witnessed one creating almost as much interest and enthusiasm. This was the $5000 race, in which Teddy Bear made the fastest time ever made on the Sacramento track, 2:05. The liberal prizes offered for these harness events had brought some remarkably fine animals to the fair, but while the enthusiasm was intense, it was stated that the gate receipts were under those of last year.

The criticism voiced the loudest was directed against this liberality with the racing events. The live stock people and manufacturers felt that too great an effort had been made to encourage track events, resulting in detracting interest from other features of the fair. It was noticeable that during the principal track events all other portions of the grounds were nearly deserted.

The premiums offered on draft horses, beef and dairy cattle and horticultural products made a pitiful showing in comparison with racing prizes. Take for instance draft horses. The highest premium offered was $20. In registered cattle the highest premium was $25. In the dairy division an especial effort was made on the five days milking contest prescribing three milkings per day in charge of experts of the State University. In this there was most intense interest, as it meant much for the advancement of the dairy interests of the state, yet the first premium was $50, second $25 and third $15, with similar premiums for cows under three years.

In horticultural products there was more liberality, the best exhibit of peaches, pears, apples, plums, grapes, citrus fruits, and dried fruits and varied exhibits called for a first premium of $50 in the special premium class. In the citrus exhibits the various fruits called for $20 first premium, with others running down to $2.50, and these citrus fruits alone bring to the state between $30,000,000 and $40,000,000, yet the entire citrus class commanded only $122, yet a few minutes' contest of trotting horses was allowed to command $10,000 and to be taken out of the state.

The most liberal in the special prize list was for the county exhibits, these to consist of agricultural, horticultural, viticultural, manufacturing and other industrial products of the county. In this class the first prize was $600, others in order, $400, $250, $200, $150, $100, $75 and $50. These premiums brought out some remarkably fine exhibits. Most of these were in the main pavilion, but a few were crowded out to an annex of frame and cloth between the main building and the machinery hall. This was made necessary because of the granting of space to concessions which should have been given to exhibitors. Soft drink booths with noisy spielers occupied some of the most prominent locations in the building. Placer, Sutter and Imperial Counties were thus crowded into the annex. Imperial County's representative plainly expressed his disapproval of crowding out an exhibit which had been sent nearly 700 miles. That the granting of these concessions, or at least some others, brought features of a rather low grade on the grounds is to be regretted.

But all told it was a good agricultural fair and the closest to the Simonpure article we have seen in this state. The exhibits of machinery, especially the traction engines and pumping plants, were remarkably good. There were dozens of traction engines of many different varieties. Farm implements also came in for a good showing. Combined harvesters and other machines and implements peculiar to the West were in evidence.

Live stock exhibits showed the greatest increase. The Berkshire hog class nearly doubled former exhibits. Poland-Chinas were not so generally exhibited, but some remarkably fine stock was on exhibition. Sheep classes were well filled. In beef cattle one of the strongest exhibits was by the Herefords. Representative Red Polled, Shorthorns and other beef herds were also exhibited. The Dutch Belted attracted much attention, though one county furnished the entire offering in this class. The beauty of this peculiar breed makes fine show animals. Speaking of the Dutch Belted reminds us that we failed to mention the Hampshire hogs, of which there were several exhibited. These animals are marked similarly to the Dutch Belted cow, excepting that the belt is farther forward on the body. Draft horses and coachers were perhaps not so strong as in other years. The dairy class was well filled and the contest in the new "cow parlor" was most attractive, and at each milking time many were present to observe the methods followed. Inspection was by a representative of the State University.

The poultry exhibit was also the largest ever made on the state fair grounds. Something over 1850 birds were shown by 288 exhibitors. Most of the classes were exceptionally well filled with a high-scoring lot of birds. Strange as it may seem, the Leghorn, probably California's favorite utility fowl, was one of the lightest classes. The exhibit of pigeons was exceptional as to numbers, but good judges informed us that they did not score as high as the same number of birds exhibited a few years ago would have done. Besides the birds exhibited, five supply houses made extensive exhibits of incubators, feeds and all kinds of poultry supplies. This was considered most fortunate in view of the fact that last year not a single house exhibited at the grounds.

Bee Supplies
AND
Apparatus

Headquarters for the celebrated Falcon Brand. Write for catalog.

Trumbull Seed Co.
257 Market Street
SAN FRANCISCO

VETCH
(Vicia Sativa)

The most valuable plant for cover crops now being used in California. For best results should be sown in August or September, if possible, and plowed under early in the Spring. Also very valuable as hay, and when so used should be sown with oats or barley to hold up the Vetch.

Write for prices.

Valley Seed Co.
311 J Street Sacramento, Cal.
Agents for Mococo Fertilizers

Rambler
Motor Cars
Are the products of 40 years of manufacturing experience and embody every advantage of comfot and convenience necessary to the man who values quality above extravagance.

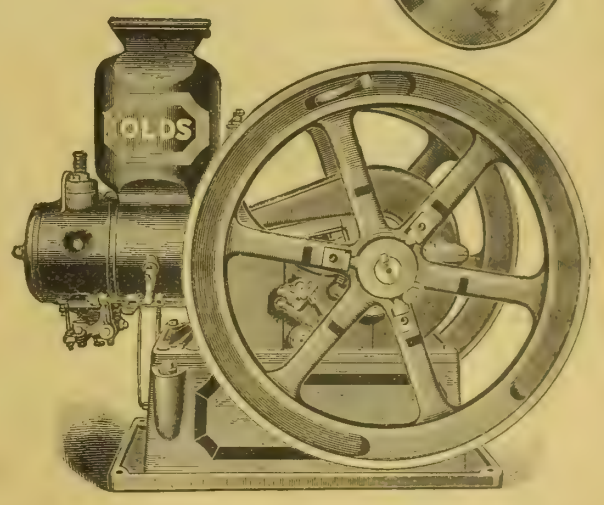
FREE this real leather bill fold for the Head of the Farm

(Not for boys—they're all right and their turn will come later—but this is for the boss.)

Thousands of farmers will buy gasoline engines this Fall. I want to get in direct and personal touch with every one of them, as I want them to know about the Olds Engine.

If you are going to buy an engine, or are thinking about it, you ought to know what an Olds Engine will do for you. I want to tell you about them—give you just the information you want—so if you will fill out the coupon below (or write me a letter) saying what size engine you want, whether portable or stationary, and when you expect to need one, without asking you to make any promise or obligating you in any way, *I will send you absolutely free* this genuine calfskin bill fold, stamped with your name in gold letters.

It will hold fifteen bills easily. When folded it will go in a small pocket. It is very convenient, handsome and useful; will last a lifetime. Has no advertisement on it.



OLDS GASOLINE ENGINES

are known the world over and used by farmers everywhere. They are the most satisfactory engine made for farm work. I guarantee them to do all we say they will—you to be the judge. Ask any man who has an Olds Engine. He will tell you.

We also make complete electric light and water systems especially for farms.

Write for our prices on corn shellers, corn huskers, feed grinders and cream separators.

If you are going to buy an engine, put a check mark (X) in the place showing the size and style engine you want, and when you expect to need it, and mail to me personally at once. Address me as below.

BRANCHES
1007 Farnam St. Omaha, Neb.
2112 Central St. Kansas City, Mo

J. B. SEAGER, Gen. Mgr.
Seager Engine Works
993 Walnut St., Lansing, Mich.

BRANCHES
204 N. Los Angeles St. Los Angeles, Cal.
65 Beverly St. Boston, Mass.

To make quick deliveries, I also have a complete stock of engines and parts in warehouses at
Houston, Tex. Atlanta, Ga. Decatur, Ill. Lexington, Miss. Cairo, Ill. Minneapolis, Minn. Binghampton, N. Y. Philadelphia, Pa.

NOTICE—If you prefer, write to my nearest branch, and if I am not there, my personal representative will attend to it

Cut or tear off here

Send me full particulars about the following engine. It is understood that I do not obligate myself in any way by asking for this information. 993

Style wanted: Portable Stationary.

Horse Power wanted: 1½ 3 4½ 6 8 12 15 20
Expect to need it: Aug. Sept. Oct. Nov. Dec.

Name .....

Town .....R. F. D.....

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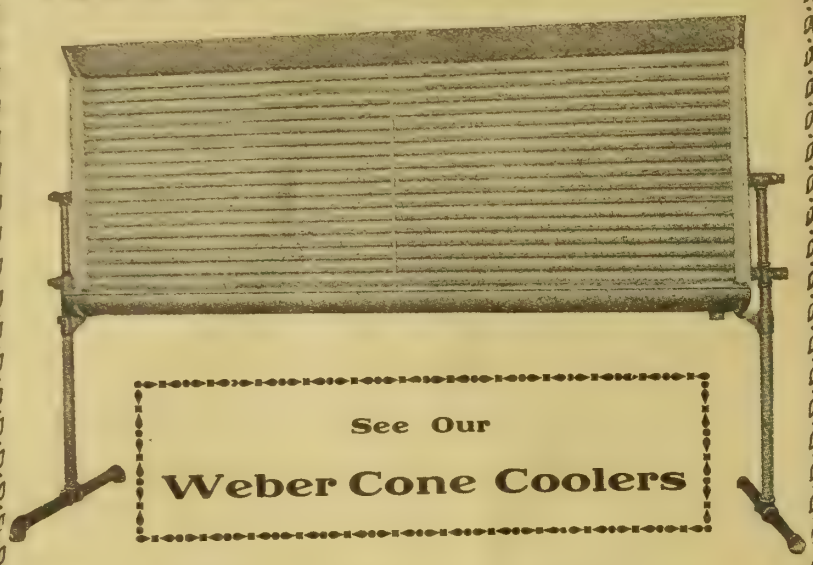
Sign name plainly, just the way you want it on bill fold

Milk Coolers



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Weber Cone Coolers

Sanitary and Durable, complete with 12-Quart Tank, $4.50

Will cool 30 gallons of milk per hour to within three degrees of temperature of water.

Cream Coolers $2.50 Each

Weber Copper Tubular Coolers from $18.00 up

We manufacture all our own Coolers and can supply Coolers and Aerators any capacity from one cow to 20,000 pounds per hour.

Sunset Br'y. 5006 — O. J. WEBER CO. — Home F 3657

Manufacturers and Importers of

Machinery and Appliances for Dairy and Creamery

225-227-229 East 6th St. Los Angeles, California

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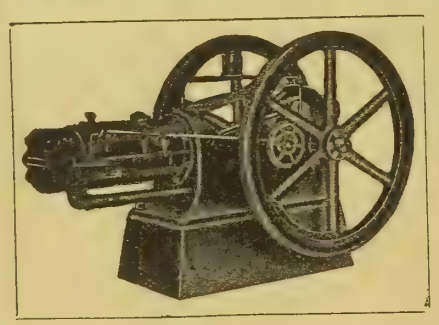

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Our 1911 Catalogue Showing 1912 Construction Can be Had by Writing

The

COMMERCIAL ENGINE CO.

951-953 No. Main St., Los Angeles, Cal.

Krogh New Type Vertical Water Balanced Pump

This Pump

Will Interest the Irrigator

Pump has Water Sealed Gland, Enclosed Balanced Impellor. Will not cut out by sand. Can be placed in a smaller pit than any other pump. Our Bulletin, C12, tells all about it. The pump can be seen in operation at our places of business. We have a permanent branch house at

206 No. Los Angeles St., Los Angeles

Krogh Mfg. Co.

149 Beale St. San Francisco, Cal.

Live Stock and Dairy

Dairymen and stockmen are requested to write of their experience. Mrs. Sherman is always willing to answer queries and this, with experience of other workers, will make this department of greater value.

FILLING THE SILO.

(Concluded from last week.)

Adding Water During Filling.

Ordinarily corn cut at the proper time does not need any water added to make good silage. There are times, however, when it is necessary to add water to the corn in filling the silo. The corn in the silo at the time of filling should feel moist; if not moist, water should be added. Under any of the following conditions water should be added to the corn when filling the silo: First, when the corn is too ripe, and the leaves and part of the stalk are dried out to such an extent that they will not pack well. Second, when the corn is severely frozen before it has reached the proper degree of maturity, liberating the moisture and leaving the leaves and stems dry. Third, when refilling the silo late in the fall with shocked corn it is always necessary to add water.

There are two ways to add the water. First, put a hose in the silo and thoroughly saturate the dry portions, especially around the walls. Second, where the blower cutter is used, run an inch stream of water into the blower when it is at work. This will add a sufficient amount of water to insure good results.

Filling Cracks and Air Spaces in Silo.

The silo should be air tight. Any crack or space which lets in the air will cause more or less moldy silage. These troubles in wooden silos may be avoided at filling time by having a pail of soft clay at hand; as the silo is filled up, anything that looks as though it was not air tight should be filled with a handful of clay. Any cracks or openings in masonry silos should be properly fixed with cement before filling. Great care should be taken to have the door fit well and air tight. In a good silo, properly filled, there should be no waste except at the top.

Preventing Waste on Top of Silo.

There is always some waste on the top of the silo, unless feeding operations are commenced as soon as the silo is filled. The amount of waste material varies under different conditions of management from two inches where great care is exercised to ten or twelve inches where practically no precautions are taken to protect the same. Various methods for lessening the amount of waste have been tried out. One of the first precautions is to thoroughly pack and level the top of the silo. Some use oat chaff or cut straw. Others thoroughly soak the top with water, then seed with oats. The oats germinate and form a thick covering which serves to keep out the air, thus lessening the waste. One of the easiest and most satisfactory methods to pursue is to pick the ears of the last three or four loads of corn, then run the stalks through the cutter into the silo. Thoroughly tramp the same. Then put on from twenty to thirty barrels of water. This has the effect of hermetically sealing the silo, and only a very thin layer of waste will be on top.

Cost Per Ton of Filling Silo.

The cost of filling the silo (cutting the corn in the field, hauling it, putting it through the silage cutter, tramping, leveling and covering the silo) varies from 40 cents to $1 per ton. It depends on many factors. First, the distance the corn must be hauled from field to silo. Second, the kind of weather, as it will cost about 50 per cent more to fill a silo during wet and broken weather than during dry, clear weather. Third, the kind of machinery used. The cutter must be a strong, well built machine with a wide feed mouth, because at times it is put to very severe tests. The motor power must be ample; a fifteen horsepower engine is much more satisfactory than a ten where rapid filling is practiced. Fourth, a well organized crew of men will fill a silo much cheaper than where organization is lacking. The machinery should be kept going at full blast all of the time.

The following statement, furnished by a very successful dairy farmer, gives a fair idea of the cost of filling the silo: "We hire an extra man or two and make long days with the regular help during the filling season. We have our own outfit, silo cutter and engine (sixteen horse gasoline), also corn binder. We use our regular low wheel, flat rack wagons, and have two pitchers in the field, and let one of them take the herdsman's wagon for the first few loads in the morning and the last few at night.

Four teams and drivers	$16.00
Corn binder, man and team	10.00
Cutter and engine with one man	15.00
Two extra men to pitch	5.00
Two men in the silo	5.00
Thirty gallons of gasoline	3.60
Total cost per day	$54.60

"This crew will put in from eighty-five to ninety tons per day; thus it costs around 60 to 65 cents per ton to fill the silo."

The above statement is a fair one. It has cost from 60 to 75 cents per ton to fill the silos at the Iowa Experiment Station during the past eight years. The higher cost was due to hauling a long distance or to rainy weather when the loading was more difficult and the sand and dirt on the corn made it very difficult to keep the knives on the silage cutter in good working condition.

When to Open the Silo.

The corn may be used for feeding purposes as soon as the silo is filled. For the first few days it will be simply cut corn, as it is not silage until it has gone through the heating process. In a week or ten days' time the real silage will be reached. When managed in this way there is no waste on the top of the silo. If allowed to stand for several weeks there will be some waste in the form of decayed corn. This should be removed and hauled to the field in a manure spreader, as it is not always a safe feed for any class of live stock.

BERKSHIRE PRIZES.

The American Berkshire Association, Springfield, Ill., announces a number of special premiums and contests for the promotion of interest in Berkshire hogs. Some of these prize contests are unique. This association will pay $100 if the grand champion carload of hogs at the International Live Stock Exposition is Berkshires

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or show a preponderance of Berkshire blood and will pay $50 if the reserve for grand champion is won by Berkshires or by hogs showing a preponderance of Berkshire blood.

The association is offering prizes of $15.00, $10.00 and $5.00 for the best photographs of Berkshires.

It is offering $50.00, $25.00, $15.00 and $10.00 for the best original essays on the history, characteristics and merits of the Berkshire hog, competition being limited to students of the agricultural colleges.

The association is offering $25.00, $15.00 and $10.00 for the best written advertisement to be used by the association in promoting the breed.

ANTI-CHOLERA SERUM FOR SWINE.

In view of the fact that the State Agricultural College will soon be in position to distribute anti-cholera serum we quote the following from Purdue University Agricultural Exchange Station.

Anti-cholera serum has been produced by the Purdue Experiment Station for the past three years. About 50,000 hogs have been vaccinated and treated. The results of this work have been highly satisfactory. Reports sent to this station by farmers who have used serum on their hogs show that the average loss in the infected herds treated was 9.5 per cent, and following the vaccination of the healthy herds in these infected localities, 2.25 per cent.

In neighborhoods where hog cholera infection is present, all herds in the near vicinity or on adjoining farms to the cholera herds should be vaccinated. This precaution, if taken, would prevent the spread of the disease and result in the saving of the exposed herds. Anti-hog cholera serum is chiefly a preventive agent. Because of the losses that sometimes occur in the badly infected herds that are treated and the large doses required, we refuse to furnish serum for the treatment of such herds.

As practically all of the vaccination work is done in cholera infected localities and exposed herds, it is very necessary to determine whether the exposed hogs are infected before giving them virulent cholera blood. In hog cholera, the animal is feverish several days before it stops eating or manifests marked symptoms of disease. For this reason the body temperatures of all hogs should be taken before injecting the virulent blood. If the animal has a body temperature of 104 degrees or more, serum alone in an increased dose should be used. Virulent blood should not be given when fever is present, whether it be from hog cholera or any other cause. Failure to practice the above precaution has resulted in heavy loss in a number of herds where serum has been used.

The most desirable size at which to vaccinate hogs is when they weigh from 40 to 60 pounds. At this size the dose of serum is comparatively small and the young hogs can be easily handled and rendered permanently immune. In infected localities it is sometimes necessary to vaccinate small pigs. This is frequently practiced, but it may be necessary to re-vaccinate them within a few months as the immunity is not permanent.

It is essential that the herd be given good care during and after vaccination and treatment. Hypodermic syringes appropriate for the work should be used and these should be carefully cleaned and disinfected before using. The inner sides of the thighs where the injections are made should be washed and disinfected. After vaccination the hogs should be kept out of dirty pens, manure piles and muddy wallows, in order to prevent infection of the small wound made by the hypodermic needle. The herd should be given clean, dry pens, free from dust and well bedded, and fed a light ration for a few days following the vaccination. When the abscesses form, they should receive the necessary treatment. Badly infected herds should not be treated with serum. If the infection is recent, serum may be used, but in addition the herd should receive proper treatment and care. The average cost of vaccinating hogs has been about 60 cents per head.—H. H. Madaus, Assistant in Veterinary Laboratory.

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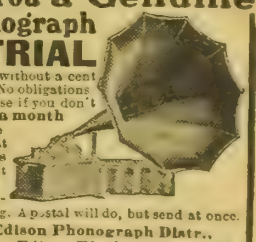

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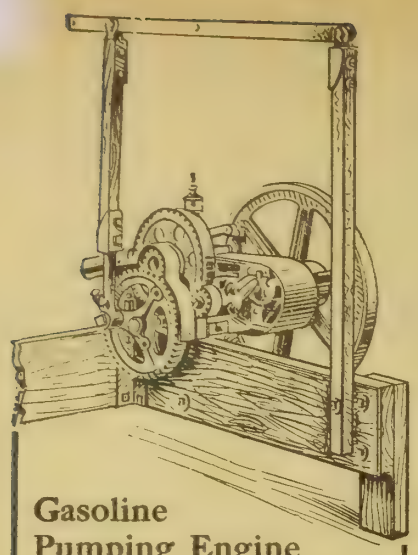

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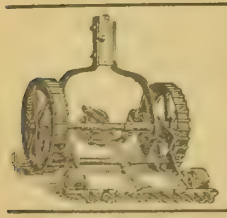

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Hanford, Kings County, reports a new vine pest in the ground burrnut.

Small Fruits and Vegetables

THIS MONTH.

By O. M. Morris.

This month brings us to the time of the second busiest garden season of the year, as this is the proper time to plant most all classes of vegetables and many of the flowers.

In the list of vegetables we would suggest large plantings of cabbage, cauliflower, lettuce, carrots, beets, kale, Brussels sprouts, endive, cress, kohl-rabi, onions, parsley, radish, spinach and turnips, and most of the herbs. By planting the above now, cabbage (early), cauliflower, kale, Brussels sprouts, kohl-rabi and onions would be ready for use from November 1st to February 1st. The endive, spinach, parsley, turnips, cress and lettuce would be ready in two and one-half months and radish, early varieties, in thirty days, and winter varieties such as Mikado, Chinese Winter and Long Japanese would be at best in about two months. One advantage by planting now one can grow a crop of vegetables with less water and labor than at any time of the year.

The varieties most popular with our market men are about as follows: in cabbage, Winningstadt, Cannon Ball and Danish Ball Head are far in the lead, the former has small pointed heads, while the latter have round heads, and for private use are the best by long odds. One grower here says he cut over sixteen tons of Cannon Ball to the acre. Every one has a perfect head, and sold in Pasadena market at a good premium over the Winningstadt and product was very much heavier.

Cauliflower, the California Pearl, a local variety, is quite popular, but the Dry Weather, a new variety from Denmark, is proving very satisfactory; the Snowball is popular as a small very early sort, but its size is against it.

Carrot, Oxheart and Chatenay are the leading sorts, the former a little the earlier and most popular.

In lettuce, the Iceberg up to this date has held the market, but from now on through the winter, "The Los Angeles Market" strain of New York is practically the whole thing, but Wonderful is also used by many. These are all curly cabbage heading varieties.

The most popular beet is Crosby's Egyptian, but many growers prefer Eclipse for late fall planting as it makes a better or heavier top and is better protected.

The new variety of turnip, Early Snowball and Golden Ball, are very popular six or eight weeks varieties, are very sweet, round and fine flavor, but many still prefer the Purple Tops which are always good producers.

Prickly seeded Winter Spinach is about the only one used from now on till warm weather.

In onions there is no one variety that takes much precedence over the other, unless it may be the Bermudas (Red, White or Crystal Wax) which do extremely well through the winter, but any or most of the Spanish onions also do well and mature early, are sweet and fine flavored. For bunching onions or those used in small green state, any of the small early Spanish onions are good for this purpose.

In localities that are warm and in well drained soil, beans can be planted for thirty days yet. The Refugee, Stringless Green and Canadian Wonders are the best for planting after this date. These varieties will be ready for use in fifty to sixty-five days and can be held on vines for some time.

HOME GROWN BEANS.

Have you ever noticed the difference in the taste of Lima beans cooked soon after being picked from the vines and those that have stood over night or longer? After we moved to the city I could not reconcile myself to the difference in the taste of my favorite bean, and looked over my limited garden space to see what could be done. There being barely room enough for a bed of lettuce and onions, some radishes and a few tomato plants, it did not seem wise to devote all that space to beans and deny ourselves the other things.

Then I had an "inspiration." Why not plant Lima beans where morning glory and other vines had been trained over the wash house, back porch, windows and fence for shade and to cover unsightly objects? For bean vines are just as graceful and as pretty as other vines.

So the soil was prepared and the beans planted, to the amusement of the family. And the beans grew, not in a single night, as did "Jack's" beanstalk, but they flourished beyond all expectation.

I gathered from one to three quarts at a time, and had beans until frost killed them. Though the family never failed to be amused when I started out with basket and stepladder (for the vines grew to the top of the wash house and kitchen), they enjoyed the flavor of the freshly picked beans as much as I did.—C. S. P., in Ladies' World.

PARSNIPS.

The parsnip is a biennial, a native of Europe, and is cultivated for its long succulent root. It is grown in much the same manner as the carrot, although the soil should be, if anything, in moister and better condition. If manure is applied, it should be thoroughly rotted, otherwise surface roots are apt to be formed. It is a deeper rooted plant, consequently the land should be fine and mellow, and loose to a depth of twelve to fourteen inches, so that the roots can easily penetrate the soil.

The seed should be sown as early in the spring as the land can be worked. It is well to sow rather thickly, as parsnip seed germinates slowly and quite a percentage of it may not come up. Radishes may be sown with it to mark the rows, so that cultivation may follow shortly after planting. Parsnips should be planted in rows twenty to thirty-six inches apart, depending on whether they are to be cultivated by hand tools or by horsepower. If very thick, the plants should be thinned to two or three inches apart in the row.—Minnesota Farmers' Library.

KALE.

Kale is one of the members of the cabbage family, little grown in this section. It is desirable to grow for greens to use during the late fall. It will stand considerable frost, and some varieties are even used after snow falls in autumn. Sow where it is to remain in the garden.—Minnesota Farmers' Library.

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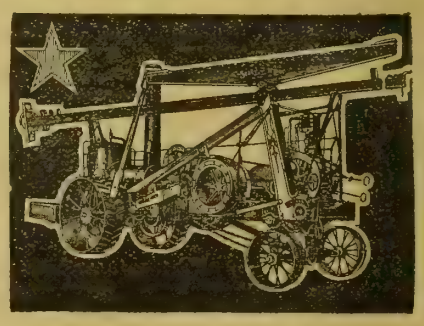

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The Ornamental Garden

THIS MONTH.

By O. M. Morris.

The Dutch bulbs are arriving and this of course is the principal item of work for the next sixty days; all such bulbs will be the better for early planting as soon as one can get them in. Any one not fully acquainted with such bulbs should post themselves by getting the seedsmen's catalogues with cultural directions, not that they are hard to handle but for the best results, especially in certain species, as hyacinths, they require special treatment.

Seed of all the hardy annuals should now be planted, such as snapdragons, delphiniums, stocks, pansies, poppies, calliopsis, godetias, lobelias, lupines, mimulus, phlox, centaureas, corn flowers, calendulas, clarkias, cosmos, gaillardias, gilia, gypsophilas, forgetmenots, mignonettes, scabiosas, nasturtiums, zinnias and all such hardy plants and by carefully arranging such, one can have a quantity of cut flowers all winter.

Sweet peas, the winter flowering varieties, should be in the ground during the next thirty days for good large healthy growth and flowers for Christmas. This is a special strain of winter flowering varieties and are the only kind for planting now. The grandifloras and orchid flowering varieties planted now will not bloom until next spring, so it is necessary to get the "winter flowering" varieties if you want winter flowers.

Many of the perennial flower seed planted now will bloom in early spring, as coreopsis, delphinium, hollyhocks, aquilegias, cyclamens, digitalis, petunias, verbenas and such class of flowers. These are best planted in small beds and during early spring plant out where they are to grow.

It would be impossible in an article of this nature to mention anything like a full list that can be planted, but have merely mentioned some sorts that one can form an idea of what to do.

THE PLANTING OF PORCHES.

A branch of the business that is too much overlooked is the adornment of porches, especially those with a sunny exposure. Some very beautiful effects can be brought out by proper planting and care. The porches where the sun beats down during the middle of the day or in the afternoon need vines that will give them a shade, and there are many of these that rapidly cover the porch and when in bloom add greatly to the decoration of the residence.

It is not necessary to be confined to one species of plant for these locations, for with a good sized porch, plants that will bloom in spring and fall can be planted at proper distances and thereby make this an interesting feature. The wistaria has always been popular, and when it is full of its lovely hanging blue blossoms in early spring is always a great attraction and a beautiful sight. The Clematis paniculata is an equally decorative plant in the fall, when it is covered with its sprays of white flowers; the other clematis are fine for this purpose, although they do not make as heavy a shade; the Jackmani, with its large purple flowers in midsummer, makes a very beautiful plant for this purpose. Roses are, of course, well known as among the best plants for this purpose, and with different varieties of the climbing roses fine effects may be produced.

Where heavier shade is desired, Aristolochia sipho is one of the finest and in two or three years from planting will cover a large area, which with its heavy foliage and hanging flowers is sure to attract attention. Another plant that is much used, and does equally well on porches on the north side, is the Ampelopsis quinquefolia, or Virginia creeper, which is also a very rapid grower after once getting established. While the flower of this plant does not amount to much, yet the foliage in the fall takes on beautiful colors, and the large clusters of purple fruits are an added feature. The proper planting of the lower part of the porch demands attention, and most of the low flowering shrubs are particularly adapted for this purpose, especially the deutzias or spireas.

There is one thing that should be always borne in mind in planting a porch with these hardy plants, and that is that they should be trained upon trellises that can be easily removed, and the plants not trained to the porch itself, for the porch must be painted, and it is almost impossible to take the big plants down and replace them in good condition, but if attached to a trellis this can be laid over while the painting is being done and replaced when the paint is dry.—Gardening.

THE BEAUTY OF ADAPTABLE SHRUBS.

Among the flowering shrubs, old-time favorites of our grandmothers, some of which have been in cultivation since the eighteenth century, are the lilac, Forsythia or golden bell, syringa, bridal wreath, wigelia, snowball, Rose of Sharon (althea) and crepe myrtle. Any of these may be grown successfully, but it is rather difficult to state in a general way just what kind of shrubs to plant. However, any reliable nurseryman will tell you what shrubs will thrive in shady places, what ones will grow in wet places, and so on.

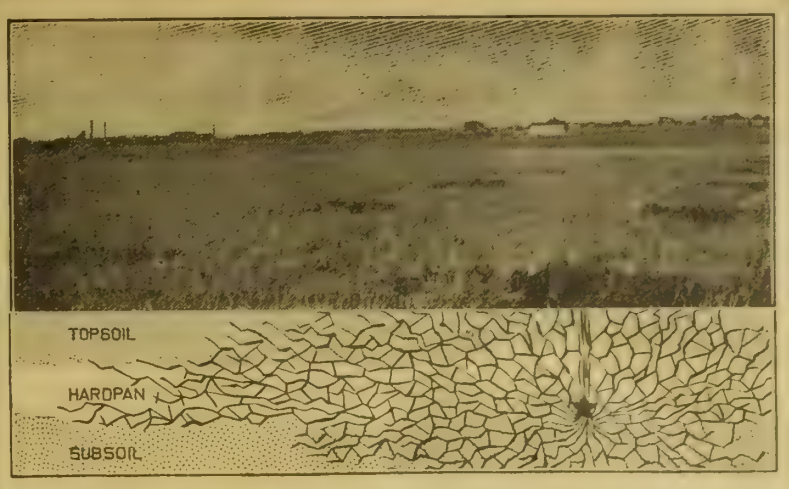
Aside from general consideration, shrubbery has its specific uses. For instance, it may be used to screen off the chicken yard, the garden, unsightly corners and other undesirable objects. With us, as a rule, shrubbery succeeds better when planted in the fall.—Farm and Ranch.

Keep the coleus and other foliage plants, used as borders, trimmed evenly. Neatness and symmetry pay in the ornamental garden.

If the lawn is weedy and the grass does not seem to make a good growth, apply nitrate of soda at the rate of 150 to 200 pounds per acre. Scatter broadcast just before watering.

The yards around the house are usually in harmony with the rest of the farm. Are yours clean and tidy?

Every farm home ought to have a telephone. The convenience will pay for itself many times over, especially in case of fire or sudden sickness.



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GROWTH FROM CO-OPERATION.

Democracy without the altruistic spirit—the spirit which considers first the general good—is a farce. The co-operative organizations which are now becoming so popular among farmers are essentially altruistic. Therein they make for democracy. The extension of co-operation means the yoking of all the forces of science and invention—which an overintense individualism has heretofore allowed to minister chiefly to the advancement of private fortunes—to the advancement of the communal welfare. Co-operation makes it no longer essential to the best economic use of either land, machinery or capital that the ownership of large areas shall be concentrated in the hands of individuals. It makes small land holdings compatible with the largest agricultural undertakings. In carrying on any public enterprise, or introducing any public betterment, the combined resources of many men of small means can usually accomplish anything possible to the multimillionaires, and accomplish it in such a way as to make the undertaking helpful in the manner of its doing as well as in its results. Growth comes rapidly to a community where many men are thinking for the general good—and just as rapidly to the individual who thus makes it manifest that he is touched with the divine spirit of altruism.—C. R. Barns.

CO-OPERATION IN FRANCE.

In the bulletin of the Bureau of Economic and Social Intelligence published by the International Institute of Agriculture at Rome, attention is called to the magnificent progress co-operative agricultural associations have made in France during the past 25 years. The number in successful operation is 5,200. Their scope is the bringing together of business and productive interests, and in addition buying and selling for their particular calling. There are over 10,000 mutual insurance societies in that country. The greater part of the co-operative marketing organizations have to do with dairies, factories and small fruit places. The law was passed in 1906 which grants to co-operative societies loans for 25 years at an interest not exceeding two per cent. Loans may be made to each society to the extent of twice its fully paid capital.

INSECTICIDE ANALYSIS.

Writing as to the large number of requests which come to the State University for analyses of cyanide, Prof. Woodworth says that many who are sending these samples do not seem to understand the provisions of the insecticide law. To reach many of these he requests us to announce:

Analyses are made for users of insecticides and fungicides for the nominal fee of $1.00 per sample. In the case of cyanides, if the quantity of cyanogen and chlorine alone are desired the report can be made within twenty-four hours. If a determination of potassium and sodium, forty-eight hours will be required. In cases of sulphuric acid the report can usually be made within twenty-four hours.

The fee should accompany the sample in order that there shall be no delay.

In all cases the registration number should accompany the sample so that we can identify the goods.

No insecticides are salable until registered, and all packages must bear the registration number.

The shipping season for the 1911 crop of almonds was opened on August 24th by the California Almond Growers Exchange. The order was from San Francisco and was for Nonpareils. Manager Dargitz of the Exchange thinks the season will prove a most profitable one to almond growers.

WESTERN APPLES.

Speaking of apples in Pennsylvania a contributor to the Country Gentleman says:

"We cannot pass through a town of any size in the East without seeing the fruit and grocery stores making a conspicuous display of western-grown apples. This has become so general that consumers have naturally come to believe that choice highly-colored fruit is produced only in the West. We cannot blame them very much, as the eastern growers have done but little so far to undeceive the consumer, while the West is persistently making itself solid with the apple-eating public. There are two good reasons for the popularity of western apples. They are packed attractively in a convenient-size box, and the buyer can depend upon their uniformity and fine appearance."

Plainly the West has established a reputation for a fairly good pack, but we need to improve on our reputation for it must be realized that in the quotation given above we are held up as an example rather than to criticise us, consequently we do not know all that the same writer could have said against our pack as well as in its favor. Sure it is an attractive pack means much in favor of apples or any other fruit consumed. In the same article, referring to the attractive pack and attractive way in which apples were displayed in large department stores, the writer says:

"Often the largest profit in fruit-growing is the easiest and most inexpensive to obtain, and the grower who spends a little extra time in putting up an attractive package and wrapping the fruit in paper is rewarded beyond all proportion to the expense.

"Some wag has remarked that apples turn red in the fall because they blush to think they have been green all summer, and if our eastern growers were half as sensitive as their fruit, they would soon realize their wonderful opportunities and show the western invaders that the home-grown apple is indeed the king of fruits and quite able to hold its own."

TRIBUTE FOR EXCELLENT WORK.

The first tree warden to be appointed in the state of California was James H. Reed of Riverside. He has made that city noted for the beauty of its streets through years of persistent labor, often having to work against the wishes of many others, but today Riverside boasts of some of the most beautiful driveways in the world. We regret very much that failing strength has compelled Mr. Reed to drop his work and tender his resignation. In tribute to him the Riverside Press says:

"It is to be regretted that he feels that he must lay down the burdens of the work which he has carried so long and so well; and the best monument which he leaves is the miles of well shaded streets, which were bare and unattractive when he began his campaign for tree planting. That monument ought to be carefully cherished and protected, for it is one of the great assets of the city, and Mr. Reed's resignation ought not to be allowed to check the progress of the work which has been so close to his heart. What he has done should be protected and perpetuated and the city should go on to even greater and better things."

CHOLERA VACCINE.

Dr. Haring of the Agricultural College informs us that the State University will be able to extend aid to the live stock industry through the appropriation made by the last legislature granting to the University a special fund for agricultural experimentation. One of the first steps taken will be manufacture of hog cholera serum. It is expected that it will be supplied either at cost or for a nominal sum to stock growers of the state. With it will be given fullest instructions for use. It will be some time before the arrangements can all be completed, but the Cultivator will make announcement as soon as the University has the material ready.

A PERSISTENT LITTLE CUSS.

On August 11, 1910, the Cultivator gave in its poultry department an article on fowl ticks. The article was brought out by an inquirer sending in specimens of the ticks infesting his chicken house and asking what to do to eradicate them. We took time to secure engravings also information from Prof. Baker of Claremont which appeared in the issue of August 10th, so the specimens of ticks were received in this office prior to the first of August. Now, the first of September, more than a year later the little container in which two of the pests were stored is examined, and one of the ticks is alive and apparently reasonably healthy. His thirteen months' fast has put him in good condition for a meal.

This gives something of an indication of the problem which confronts the poultryman who would eradicate ticks from his poultry houses. This is not the place to give an extended article on this pest, but we refer to it more to call attention to some of the persistent little wretches with which the farmer has to deal. As the old lady said of Satan, "There is one good point we can admire in him—he is persistent." We have occasion to admire very greatly the perseverance of some of the pests, and unless we have occasion for equal admiration for the farmer's, he is reasonably sure to go down in the unequal contest. But with the scientific methods which are perfected in these days and the same persistence which these ticks show, they may be overcome.

The Council of Grain Exchanges is following up a persistent and, we may say consistent, course of education in a series of circular letters to rural papers. It is the endeavor to convince agricultural editors that "The grain exchange is a necessary institution and that speculation is absolutely essential to the conduct of a grain business." "Speculation reduces fluctuation in grain prices to the minimum." It may be that the exchange will succeed in its campaign in converting some, but we doubt not many hard-headed farmers will continue to ask wherein boosting and bearing the grain market to make or break certain speculators can have any beneficial effect on legitimate production and marketing.

The American Guernsey Cattle Club is offering cups which will be awarded at a series of fairs largely over the eastern part of the United States. The cups are facsimiles of an Island of Guernsey milk can, a novel proposition and yet one which will doubtless be prized by Guernsey breeders. In addition to this cup, special cash prizes are offered. We see no offering for California's state fair or other Coast exhibition, and it is possible the Guernseys are not yet plentiful enough to make a showing which would justify the organization in presenting them, but pure bred cattle are winning greater place in the state, and the association which would preempt the ground should get busy to encourage its breed in every possible way.

The 1911 session of the Farmers International Congress will be held at Columbus, Ohio, the week beginning October 12. The Secretary of the Congress is George M. Whitaker.

Agricultural News Notes of the Pacific Coast

Northern California

Picking hops in Sonoma County begins this week.

Siskiyou County is planning to bond itself for better roads.

Nevada County is harvesting a fine bunch of harvest pears.

Marysville's prune crop is not up to the average in quantity.

Marysville seedless grapes are being shipped East in car lots.

Santa Rosa Grange held a meeting last week with good attendance.

Arbuckle, Colusa County, is establishing a reputation for fine Tokay grapes.

Wild ducks are proving very destructive in the rice fields near Biggs, Butte County.

The Bartlett pear crop of Nevada County is being harvested. The growers expect large profits.

About twenty-five per cent greater than any past year is the estimate of Butte County's olive crop.

Newcastle, Placer County, claims the shipment already of over 500 cars of deciduous fresh fruits.

The Southern Pacific will construct a fine park around its buildings at Los Molinos, Tehama County.

The culture of rice is being successfully carried on in Colusa County this year on land before given up to pasturage.

The Sacramento Valley Irrigation Co. has 700 men and over 1000 mules in its various grading and construction camps.

The fruit growers of Butte County are disposing of their green fruit this year, drying only what is too ripe, as they find the green crop pays better.

The pest of army worms in Sisson, Siskiyou County, has turned to an annoying pest of butterflies. They are said to be so thick that they stopped a game of baseball.

The olive industry is growing more popular in Butte County. Prices this year are better than ever, many growers claiming that they give better profits than oranges.

Oroville, Butte County, has promise of the biggest citrus crop that section has ever known. The increase is said to be due to better care having been given to the orchards during the past year.

The great siphon which will carry water to the Sacramento Valley's irrigation ditch under the track of the Southern Pacific, Willows, Glenn County, will be completed in about three months.

The Eel River Valley Apple Growers Association has appointed a committee to gather data regarding the construction of an apple dryer. The headquarters of the association are at Rohnerville, Humboldt County.

A village farm plan is to be inaugurated at Los Molinos, Tehama County. All the farmers will reside in the center of the colony, and the farms will surround the town in all directions.

The State River Board has recommended that Star Bend on Feather River be cut, if property owners will provide right of way and pay half the cost of construction. The state engineer has estimated the cost of the work at between $60,000 and $70,000.

Central California

Fresno County Fair will be held October 3-7.

Muscat raisins are being sold at 4½ cents at Fresno.

Kerman, Fresno County, will hold a farmers institute September 27-28.

Peach growers are refusing to sell dried fruit at less than 10 to 10⅛.

Lodi grape men have fixed upon $11 as the minimum price of wine grapes.

Tulare County prune orchardists have been compelled to prop their prune trees.

The greater portion of the Malagas have already been shipped to Eastern markets.

The Merchants Association at Lindsay, Tulare County, held its first fruit market day on August 30.

Greek laborers are being used largely in the gathering of the grape crop of the San Joaquin Valley.

Kern County boosters claim that over 260,000 acres of land in that county are in the citrus belt.

The next meeting of the Citrus Chamber of Commerce at Porterville will discuss methods of fertilization.

Requests have been coming in to Mayor Davison of San Jose for white families to go out into the prune orchards.

Tulare County has sent its last honey to the Eastern market, the bee keepers association of that county forwarding about ten cars.

Japanese labor contractors around Fresno are making contracts for raisin picking at about one cent per tray above last year's price.

Agitation still continues regarding the formation of the raisin growers into an organization similar to the citrus fruit growers exchange.

Several of the larger raisin buyers of Fresno have threatened to call in all their buyers because of the big prices demanded by the growers.

Fresno fruit shippers have secured lower express rates, which will permit the handling of small shipments of oranges on a more profitable basis.

The country about Clovis, Fresno County, has sent out shipments of green deciduous fruits amounting to over one hundred cars so far this season.

Turlock recently held a great watermelon eating contest. A $50 prize was given to the one eating the 20-pound melon in the shortest time. It is said Charlie Chambers was referee.

Fresno reports word from the Remsen Board that a permit will be issued for sulphuring dried fruits on the basis fixed by Germany. This is generally acceptable to the fruit growers.

Squirrel Inspector Zimmerman of Tulare County reports a shipment of seven tons of poisoned barley to the White River and Hot Springs districts by the Southern Pacific. The poison is to be furnished free to renters of railroad land.

At a meeting of the Santa Clara Grape Growers Association last week prices for grapes for the 1911 crop were fixed at $18 for ordinary wine grapes, with finer grades running as high as $24. It is estimated that the year's output will be 25 per cent greater than last year.

Southern California

Test wells are being sunk near Hemet, Riverside County.

A new creamery will be established at Perris, Riverside County.

San Bernardino is planning for a farmers institute to last several days.

Turkey raising is still proving remarkably profitable in the Imperial Valley.

Another large packing house is to be built at Ontario, San Bernardino County.

The San Diego County horticultural commissioner reports purple scale increasing.

The Coachella Valley promises to install a gin which will handle long staple cotton.

Pomona Cannery, in eastern Los Angeles County, is handling 4000 boxes of peaches daily.

The Rancho Verde Company at Victorville, San Bernardino County, shipped five cars of fat steers last week.

The water system supplying Rochester, San Bernardino County, will be increased by the purchase of new supplies.

The pear crop at Little Rock, Antelope Valley, Los Angeles County, is reported as somewhat smaller than last year, but of exceptionally fine quality.

Imperial County has a shortage of cotton pickers, but all laborers who can be pressed into the work are beginning on the season's pick.

A brush fire in San Dimas Canyon, Los Angeles County, called out many fire fighters and it was brought under control when about 650 acres had been burned.

Escondido is holding a county fair this week and Saturday will be special grape day, when the promise is made that ten tons of her matchless grapes will be distributed free.

Imperial County, the youngest county in the state and but ten years ago known as the Colorado Desert, claims to rank fifteenth in the amount of business transacted in its county offices.

The Farmers Warehouse Company, operating at Huntington Beach, Orange County, is busy rolling barley and cleaning beans. The plant has up to date machinery and a big working capacity.

Engineers have inspected the Alamo channel of the Imperial Valley irrigation district and it has been found that the bottom of the canal is higher than the sill of the intake gate, but this is said to be an indication of better conditions than a year ago.

Corona, Riverside County, bee keepers have pooled their interests and a car of water white honey is being loaded for shipment to Germany. There are 250 cases in the shipment. It is said the shipment will bring to the growers 17 cents per pound.

The Fillmore Herald states that one morning last week saw fourteen wagonloads of apricot pits standing to have their loads weighed. Each wagon contained from one to three tons of pits. The pits are cracked and the kernels shipped to Germany, and some of them may be returned to us in the shape of "almond meal" and other "almond" preparations.

The Coast

Arizona is greatly stirred over the coming election on statehood.

Tacoma hop growers predict that a 50 cent price will yet be reached.

Harvesters near Pullman, Washington, were greatly injured by heavy rains out of season.

The Colorado potato growing sections report about 60 per cent of a normal crop for 1911.

Rogue River Valley pear growers are picking fruit in a half hearted way, owing to the low market.

Kermit Roosevelt killed several mountain sheep in his recent hunting trip in Lower California.

The Hood River apple growing section will have a crop this year of only about fifty per cent that of last year.

From the present outlook the hop harvest of Washington County, Oregon, will about equal that of last year.

The Siskiyou Electric Power and Light Company has control of great water power and irrigation possibilities near Medford, Oregon.

Meat packers at Portland, Oregon, are bearing the price of cattle and it is rumored the farmers are in arms and will seek other markets.

For the purpose of determining the action of cover crops an association of fruit growers of Hood River, Oregon, will conduct four experiment stations.

Hop picking will begin in Lane County, Oregon, the first of September. The condition of the crop is exceptionally good and free from insects and other pests.

A few weeks ago fears were entertained that drouth would greatly injure the hop crop near Tacoma, Washington, but a copious rain has saved the day.

Boise, Idaho, plans a week's carnival, beginning October 9, in honor of the progress of the country since the coming of irrigation. There will be large agricultural exhibits.

Farmers at Goldendale, Washington, are experimenting in endeavor to find the best crop to rotate with wheat which they find is exhausting the soil from continuous one-crop culture.

A representative of the Choctaw tribe near Spokane, Washington, is taking steps to have restored to various Indian tribes of the Northwest $10,000,000 to $15,000,000 for lands taken from them wrongfully.

Eastern capital has been interested in installing an irrigation plant for a large tract of land near Ontario, Oregon. The water will be raised to the foothill section by three lifts, one of fifty, one of eighty, and one of 100 feet.

Eleven thousand acres of land in Klamath County has been restored to the public domain after having been withdrawn for reclamation purposes. The land has been determined too high to be reached by the government irrigation canals.

The Spokane Apple Show management offers $20,000 in premiums for its coming show. There will be a series of growers conventions and country life meetings. In addition to the $20,000 premiums $15,000 will be spent in pageants and other features connected with the celebration.

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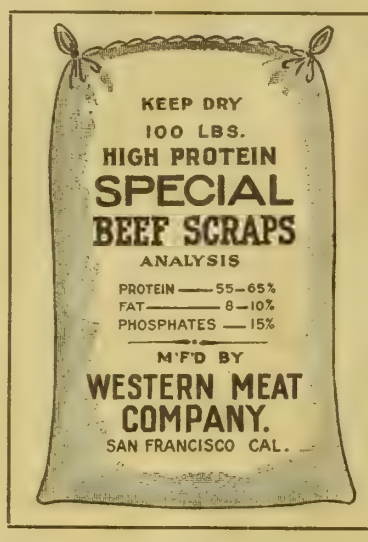

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Practical poultry people who may have ideas from their experience as to methods of feeding and housing and general care of poultry will confer a favor upon the Cultivator and its circle of readers by sending in concise accounts. Mrs. Basley is always willing to answer queries, which with the experience of others should make this a most valuable feature in poultry life on the Coast. Opinions or matters of a personal nature should be omitted, but a concise statement of facts is always valuable.

NOTES FOR THE SQUAB-RAISER.

In order that it can be taken out and cleaned, the floor of each nest should be movable.

Sawdust should not be used in the nest, as it harbors lice.

Never add new birds to a flock already started if you can possibly help it.

After seven or eight years' breeding, the usefulness of the bird is ended.

For want of the proper experience the first year the parent stock are apt to be more or less careless and neglectful.

After giving the feed, it is best to leave the loft, as pigeons are apt to forget their young if they are watched while feeding.

It is estimated that a pigeon of the average size will need an ounce of food a day, together with plenty of grit, salt and fresh water.

Where a loss of appetite and indisposition of the bird is noticed, a good remedy is to feed a little hempseed, add precipitated chalk to the drinking water, and keep a good supply of grit within reach. It will help greatly if the bird is isolated for a day or so.

Squabs cannot see until about eight days old.

A good weight for dressed squab is eight pounds to the dozen.

The eggs hatch on the eighteenth day of incubation.

In stocking the loft, allow two nests for each pair of breeders.

As a rule the breeding season extends from March until September.

The first egg is generally laid about two weeks after the nest is made.

The market price for dressed squabs is best during January, February and March.

The Homer is a strong, well built bird of good size, thrives in confinement, is an earnest breeder and a careful feeder.

The Runt is the largest of the pigeon family, but is a slow breeder.

Never feed new grain; it is apt to cause bowel trouble.

Rye is a grain that should never be fed, as it is very laxative and liable to cause severe intestinal irritation and death.

Hempseed should never be fed liberally, as it is very heating and fattening.

An overcrowded loft is both unprofitable and a danger.

When the young birds are about two weeks old, the wing and tail feathers generally start growing. The small feathers follow these.

The old birds quit feeding their young as soon as they hatch out a new pair of squabs.

It is a mistake to build the house directly on the ground. Such lofts are generally damp, and, besides, are difficult to keep ratproof.

There should be no cross pieces in the middle of the fly, as birds are often injured by flying against them in a sudden fright.

The small, round louse, found on the body and head, is the most troublesome.

Before placing new stock in the loft, it should be quarantined for a week or so.

Being very fattening, millet-seed must be very carefully fed.

Be sure to sift the cracked corn before feeding.

Pigeons are great water-drinkers, especially while caring for their young.

Do not stock the loft with "cheap" birds. In buying, the price should be governed by quality.

Large squabs are produced by large-sized breeders.

Success follows experience.

A mating should never be broken as long as satisfactory work is being done.

Fresh water should be given twice daily, but only the very best of grain. Avoid damaged stuff.

Do not fail to bear in mind that the profit is derived only from mated pairs.

HEN TALK.

The loss of young chicks is very great through the country each season, and while it may seem to be a different disease each year, from the most prominent symptoms, I think two causes may be blamed for all the loss.

Lice and lack of vigor. Which of these two is more to blame I can hardly say, and when both combined attack or are in the same flock there is little chance of rearing a profitable per cent. The lice we can and must fight along day by day; the lack of vigor must be looked into this fall before selecting the flock for next season's hatching eggs.

Nothing but vigorous parent stock will produce eggs that hatch chicks worth the bother of rearing, and while there will be some puny chicks from the most vigorous flock, they will be a small minority.

Disease, filth, lice and inbreeding, all or any, cause lack of vigor among the breeding stock. Starved or over fat breeders will not produce strong hatching eggs.

If you are convinced the breeders are off, either procure new parent stock for eggs or procure eggs from a vigorous flock for incubating. It is much better to be late in hatching chicks than to have earlier chicks that are weakly.

A strong chick a month the younger will go ahead of the month older chick before fall comes, and will be of some good when it is grown.

Don't ever keep the weakly chicks for either winter layers or to place in the breeding pen. They will lay few if any more eggs than will pay for their board bill, will six times out of ten hatch weak chicks, and they are always grabbing at chances to take cold, roup, or to go under from the least offness in their feed. In short, they are weaklings from start to finish.

Inbreeding for the sake of fine feathers and appearance will ruin the best flock if persisted in a few years, and as we cannot always know how recently some of the flock have suffered from this, procure cockerels this fall that you know are in no way related, or, better, purchase a setting or so of good eggs, and carefully cull out all but the very best cockerels. Don't keep any of the pullets either, unless they can be penned to themselves.

If this rule is adhered to strictly,

the weakness from inbreeding will never bother, and the lice and disease won't bother if right conditions are carefully practiced.

Lack of vigor is the one really great bugaboo in rearing chicks. Vigorous flocks belong to the one that has such "fine luck" with chicks.—Indiana Farmer.

POULTRY HINTS.

No one farm is large enough for more than one variety of fowls.

Impure water will not produce many eggs of any kind, and none that are good.

The average farmer who grows large crops of grain on his farm is the poorest feeder.

Coarse sand and gravel will reduce the amount of grit needed by the fowls, but cannot take its place.

Push the pullets along to rapid maturity.

Study the wants of each customer, and plan to meet them.

Fewer and better birds, and all as much alike as possible should be every poultry keeper's motto.

Keep a close watch for the most thrifty, and earliest-maturing pullets, and mark them for your next year's breeding pens.

The feeding problem is greatly simplified if females of about the same age are kept together. What is an ideal ration for old hens may be entirely wrong for pullets. Separate them so as to obtain approximate results while feeding.

Don't stop feeding your chickens because they are on range. Feed them all they will eat hungrily, and let them have the grasshoppers and other bugs as extras. Of course they could live altogether on the range, but if you feed them too, they will mature much more rapidly. The pullets will be laying earlier, and the young cockerels will be ready to sell sooner.

The poultry must have plenty of water these warm days. A thirsty hen will lay no eggs, and chicks deprived of water will get sick.

Milk is fine to feed the hens. It supplies the albumen which is such a great part of the egg.

Bread, soaked in milk, and then squeezed dry, is excellent to feed young chickens and ducklings.

Poultry, running in the orchard and fields, is a great help to the farmer in his work of destroying harmful insects. By all means keep as much poultry in the orchard as you can.

When selling your surplus stock, don't forget that you will want some yourself for table use.

FEATHERS.

Don't pen up ducklings and goslings in the hot sun. Be sure they have plenty of shade and water, and green stuff to eat.

It is too late now to hatch pullets for early winter layers, but if hatched now and given the right care they will begin laying in January and February and make good summer and fall layers. The early hatched pullets cannot lay all the fall and winter and through the next summer, so, if you have room for them, hatch some pullets now to keep the egg basket filled while the earlier flocks are resting or setting next summer.

If you are not willing to do the work necessary to keep your poultry free from lice, don't try to raise it. It will not pay you.

Don't pen up ducklings and goslings in the hot sun. Be sure they have plenty of shade and water, and green stuff to eat.

LIMBERNECK.

In answer to an inquiry for a remedy for limberneck, would say that this disease is an affliction that is usually caused by fowls eating diseased meat full of maggots. Some say it is also a result of ptomaine poisoning. The remedy is turpentine, and the following is a good treatment: Mix a tablesponful of turpentine in an equal amount of warm water and pour into the crop. Follow by filling the crop with warm water, and then, holding the fowl by the feet, gently work out the entire contents of the crop. When thoroughly cleaned, give a tablespoonful of castor oil, and allow the fowl to remain quiet by itself until recovered. Of course it is obvious that unless the source of the trouble is removed the fowls will still eat the diseased meat and become ill again, therefore a careful inspection of the surroundings should be made to see that no dead and decaying animals are lying around as a breeding place for maggots.—Kansas Farm.

PERCHES FOR YOUNG STOCK.

Authorities do not all agree whether a chicken should be allowed to perch early in life or be compelled to squat on the ground. One writer says Nature is a very reliable guide. When the wing feathers have sufficiently developed to allow the bird to use them, then perching is at once indicated. That no doubt is true, but on the other hand if birds perch while very young the breast bone, which is little more than gristle, is easily bent. But after it has taken on its more firm, bone-like condition it requires considerable pressure to bend it. In the young bird the crookedness is not caused by a break, but rather by pressure or the shape moulded. This is generally brought about by a small, round roost, the breast bone being brought down on the keen edge, and the pressure caused by the head counterbalancing the tail thus gradually forcing the bone out of its keel shape, and the indentation becomes permanent as the bone hardens.

This is especially so with chickens from inbred stock. The writer has a different method for this perching, using low, wide perches, so the chickens must squat, and thus the breast bone is protected by the legs, which will not permit it to come in contact with the perch. The practice of allowing fowls to squat on the floor is not advisable, for the reason that the floor is generally cold, and there is always more or less current of air moving close to the ground, which is apt to chill the stock.

No turkeys should be allowed to perch before they are fully three months old; four months would be better. Even when it is a case of weight for weight, a nice straight-breasted bird with the flesh laid evenly alongside it has the appearance, if not the actual fact, of carrying more meat, and no one can deny the fact that it is much easier to carve.

Diarrhoea in chickens may be caused by various things, too cold or damp weather, as a rule produces such symptoms or too low temperature in the egg chamber during incubation will produce a similar effect. The best treatment for such a condition is to keep the chicks warm and dry and feed boiled rice on which has been sprinkled a little cinnamon. Give them lime water to drink and plenty of charcoal.—J. C. Clipp.

SAVE YOUR POULTRY MANURE.

I have several queries about hen droppings. One reader wants to know whether they can be applied advantageously to growing crops. Surely they can, and often they give big returns. Save it, every bit of it, and save it carefully. A little superphosphate strewed over the accumulations under the roosts, or over the heaps under shelter anywhere, will save the ammonia in it and make it all the more effective. If you have no superphosphate on hand, use dry muck or loam instead. Mix it well and have it as fine as possible. Whenever you notice that one of your garden crops is in need of a little extra stimulation, put a quantity of the hen droppings, held in reserve for this purpose, around the plants or on both sides of the row, and afterward work it in with cultivator and hoe. In this way I often help my Lima beans, egg plants, peppers, tomatoes, cucumber, melon and squash vines along at a wonderful rate, and produce big yields.

I now have several barrels of hen droppings on hand that are intended for celery. A lot of this is added to the old well rotted stable manure which is filled in the furrows at the time these are prepared for setting celery plants. The manure is well mixed with the soil, the furrow filled in nearly level with the surrounding ground, and the plants, in single or double row, set along right where these manures will do them the most good. Some celery growers apply from one to two tons of high grade fertilizer per acre (an expense of forty to eighty dollars). With the free but discreet use of hen droppings you can raise just as good crops.—Farm and Fireside.

Filth of all kinds causes lice. The mites will breed in the droppings. Rotten nest eggs are good sources. The heat from the body of the hen hatches them by thousands. Every crack and crevice contains them. Look on the birds to find the large body lice, as they never leave the fowls. Rub a little melted lard on the head and neck of the birds, and dust the bodies well with insect powder. There is, however, no use in wasting time doctoring the birds unless the premises are thoroughly cleaned and kept clean and sanitary.

Lard and vaseline, equal parts, make a good remedy for lice on the head of the chicks. Vaseline, three parts, and kerosene, one part, is another excellent mixture. Rub it well into the down in the vicinity of the wings and on the neck. One or two applications will entirely overcome the pests.—Dr. Wallace.

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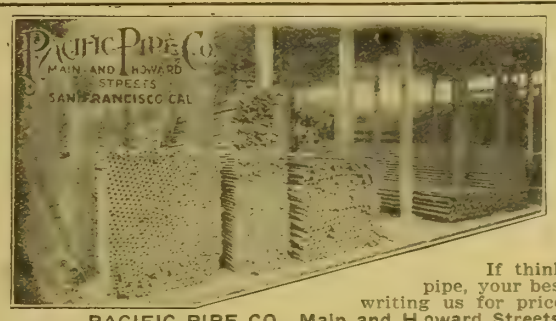

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This is the Simplest, Most Durable and Easily Handled Traction Engine on the Market

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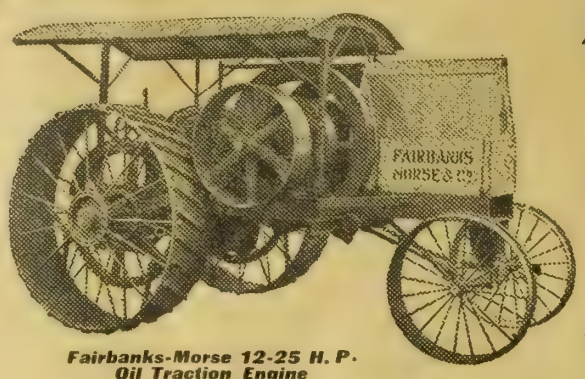

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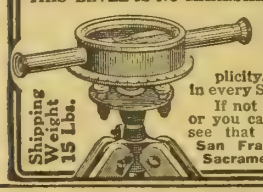

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If not on sale by your local merchant, he will order for you; or you can write either of the following jobbers direct, who will see that you are supplied. **Pacific Hardware & Steel Co., San Francisco or Los Angeles; The Thomson-Diggs Co., Sacramento; Hazard, Gould & Co., San Diego.**

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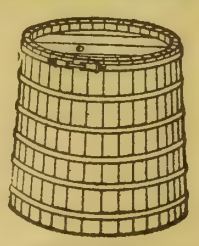

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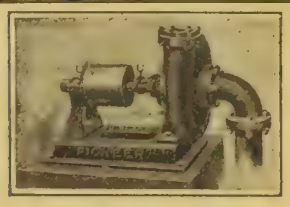

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PEERLESS IRON WORKS

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Veterinary

Answers in this column by Fred G. Matthews, M. S., D. V. M., 1232 Central Ave., Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Lameness.

My horse is lame in the right front foot. At first he would be lame at times, but lately he is lame all the time, and appears stiff in front, similar to a horse that has been foundered. When traveling the feet are glided along near the ground, consequently he stumbles more or less, and the trouble is manifested in turning. When loose he runs and plays as if nothing was wrong.—Subscriber, Palmdale.

The symptoms given are those which accompany the development of coffin-joint disease. The disease has become chronic and is incurable. Moderate work, proper shoeing and the use of some hoof-packing, or frequent soaking in cold water to prevent contraction of the hoofs, are recommended. Lengthen the heels and shorten the toes and apply shoes with lapped heels and rounded toes.—F. G. M.

Anemia.

I have a horse which eats well and his coat is fine, but he remains very thin in spite of the fact that we have tried all kinds of remedies to make him fat. We gave him worm remedies without avail. He is always hungry and, at times, eats manure.—Subscriber, Anaheim.

Take your horse to a qualified veterinarian and have his teeth examined and defects corrected. If the teeth are not considered at fault, have the veterinarian administer a vigorous purgative to be followed by alteratives and tonics.—F. G. M.

EXPORT TRADE IN PERCHERONS.

Importations of Percheron horses have been made for more than sixty years, are still considerable, and are well known. It will, however, be a surprise to many to learn that exports of Percherons have grown to considerable proportions, and are rapidly increasing.

John W. Brant, accountant Canadian National Live Stock Records, advises the Percheron Society of America that Percheron importations to Canada in the past two years are as follows:

In 1909, 283 head, about 65 per cent from the United States; in 1910, 442 head, 45 per cent from the United States; in 1911 from January 1st to July 17th, 264 head, 67 from France and 197 from the United States.

Manitoba, Saskatchewan and Alberta have taken the most, but a good many have gone to Ontario.

An aggressive advertising campaign has been waged by the Percheron breeders in Canada, and their aggressiveness in bringing out good shows at the leading Dominion fairs has brought the breed into general notice, so that the Percheron migration to the Canadian provinces promises to be greater than ever this fall.

Mexico has also taken some Percheron shipments, although the political disturbances which have prevailed there for the past year have put a damper on business. The International Land and Live Stock Company, of Jimenez, Chihuahua, has made several purchases, however, and Manuel M. Urquiza, who is located near the city of Mexico, has made some shipments and has also exhibited his Percherons at some of the Mexican live stock shows.—Wayne Dinsmore, secretary.

If your cow has obstructed teats, be very cautious about inserting milk tubes, probes or quills. Nothing of the kind should be inserted in a cow's teat excepting as a last resort, and then only with the most extreme care and cleanliness.

A sunny, clean barn means more contented cows.

GOMBAULT'S

CAUSTIC BALSAM

A safe, speedy and positive cure for

Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horse or Cattle.

As a **HUMAN REMEDY** for **Rheumatism, Sprains, Sore Throat,** etc., it is invaluable.

Every bottle of **Caustic Balsam** sold is Warranted to give satisfaction. Price **$1.50** per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address

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Good Light

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Rayo Lanterns **will not blow or jar out.**

They are easy to clean. Easy to fill and light. Made to stand hard wear.

You can get Rayo Lanterns in various sizes, finishes and styles. Each is the best you can buy of its particular kind.

All Rayo lanterns are equipped with selected Rayo globes, clear, red or green, as desired, and wicks are inserted in the burners, ready to light.

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The first step in the production of clean milk is to arrange to keep cows clean.

One of the greatest points in feeding calves is not to overfeed.

Queries

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Covering Irrigation Furrows.

After irrigation I notice suggestion for filling in furrows immediately after water is turned off. It is not clear to me whether this is done by crossing or by driving parallel with the furrows. Is there any danger of horses miring in some soils?—Subscriber, Greenfield.

Each irrigator must use his own judgment and consider the conditions of his own soils. Ordinarily the furrows are laid so as to leave a dry place down the center and on this the horse is driven, though if the furrows are far enough apart it is probable the horses could be driven on the top with safety. At the lower ends where the water has stood, as the subscriber suggests, there is danger of miring. In this case the horses can be kept off until the ground is settled. Crossing the furrows, with trees of any size, would leave spaces opposite each tree which would not be covered, so we would prefer very much to cover by driving the same way.

Drying Prunes.

Please give full directions for dipping and drying prunes and all care of them on the ranch.—Subscriber, Kingriver.

If you desire to secure the rich black prune soft to the touch be sure the fruit is perfectly ripe. Vigorous shaking of the tree will bring down fruit that is altogether too green. Dip immediately after they are gathered, as if allowed to remain in deep boxes over night they sweat and make a lower grade product. Be sure your lye is boiling, as heat is a material factor in successful dipping. The usual proportion is one pound of lye to each ten gallons of water. Some do not rinse after the lye dip, but we believe a better product is secured by the rinsing. Spread the same as any other fruit on trays for drying only one layer deep and be sure to collect and protect from rains. This can be done with the ordinary tray and still allow access of air so there is no danger of molding. When cured, and this does not mean they are to be dry, they may be covered in the boxes to sweat and equalize the moisture. Unless the fruit is sized before drying the smaller ones will be overdried, and here comes in the value of experience of the one in charge. After the sweat they are sometimes given a salt dip, five pounds of salt to 100 gallons of water. Besides this, some prefer a syrup dip, which gives a glossy appearance to the fruit. This syrup is usually made by mashing and boiling small and cull prunes. Then they are packed in the usual size 25 or 50-pound boxes and are ready for market.

Cost of Line Fence.

How is the cost of line fence between two and a half acre ranches divided between owners?—Reader, Alameda.

The cost of the fence should be divided equally between adjoining property owners, regardless of the number of acres in each place, that is, where the properties adjoin one ranch may be of 100 acres and the other of ten, yet if there is 1000 feet of fence between them the cost should be equally divided. Of course this depends upon the willingness of both parties; neither party can be compelled to join in the fence construction. In such a case one man may build the entire fence and then later, if conditions change so that the other takes advantage of the fence, he may be compelled to pay his half.

Lady Birds.

Can you tell us a good way of taking care of lady birds? They have done us lots of good this year by destroying aphis. It seems much more effective than by spraying. How can they be raised and housed or protected or carried through?—Subscriber, Greenfield.

(Continued on Page 233.)

Land To Rent

10 in. Well Sec 33. Artesian flow. Exact reproduction of photo.

in artesian belt of Kern County, N. W. of Wasco, either for cash or share of crop with option to purchase if desired at $100.00 per acre. The land is good for alfalfa, cotton, grain, etc. 204 sacks of onions weighing 100 to 105 lbs. to the sack raised on ½ acre.

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is artesian, cheap, pure and unlimited in quantity.

All conditions favorable for making money.

Preference of employment given to renters on Company's Improvement Work. Wanted men to rent at once who have stock and tools for road and ditch work.

This week we begin operations upon the ground by opening a ranch headquarters on Sec. 17. Stock, implements and grading tools have been provided to operate the company's experimental farm and to give immediate employment to renters on ditch work. Some of the best paying crops should be planted in October. Write us and make arrangements to visit the land at once.

Address

Herbert E. Carse,
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General Manager

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20,000 feet	¾-inch	Standard, at	3c per foot
36,000 feet	1-inch	Standard, at	4c per foot
20,000 feet	1¼-inch	Standard, at	5c per foot
30,000 feet	1½-inch	Standard, at	6c per foot
50,000 feet	2-inch	Standard, at	8½c per foot
10,000 feet	2½-inch	Standard, at	14c per foot
15,600 feet	3-inch	Standard, at	17c per foot
15,000 feet	3½-inch	Standard, at	19c per foot
20,000 feet	4-inch	Standard, at	24c per foot
30,000 feet	5-inch	Standard, at	40c per foot
20,000 feet	6-inch	Standard, at	45c per foot

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1,000 feet	10-inch	Diamond B. X. 40-lb. Special Casing, good as new	$1.00 per foot
1,000 feet	11⅝-inch	Casing, at	$1.00 per foot
1,000 feet	9⅝-inch	Casing, at	75c per foot
2,000 feet	7⅝-inch	Casing, at	45c per foot
0,000 feet	5⅝-inch	Casing, at	32c per foot
30,000 feet	4-inch	Casing, at	19c per foot
30,000 feet	3½-inch	Casing, at	16c per foot
20,000 feet	3¼-inch	Casing, at	15c per foot
25,000 feet	3-inch	Casing, at	14c per foot
50,000 feet	2-inch	Casing, at	6½c per foot

WATER PIPE—Riveted Dipped Pipe

10,000 feet	24-inch	Riveted Pipe, dipped, good as new	30c
10,000 feet	12-inch	Riveted Pipe, dipped, good as new, 10-guage	25c
20,000 feet	10-inch	Riveted Pipe, dipped, good as new, 12-guage	25c
10,000 feet	8-inch	Riveted Pipe, dipped, good as new, 16-guage	25c
10,000 feet	6-inch	Riveted Pipe, dipped, good as new, 16-guage	20c
10,000 feet	4-inch	Riveted Pipe, dipped, good as new, 16-guage	10c

20,000 feet of 14, 12, 10, 8, 6, 4-inch damaged Riveted Pipe, used for drain and culvert pipes for under streets, at reduced prices.

Telephone and Telegraph Poles

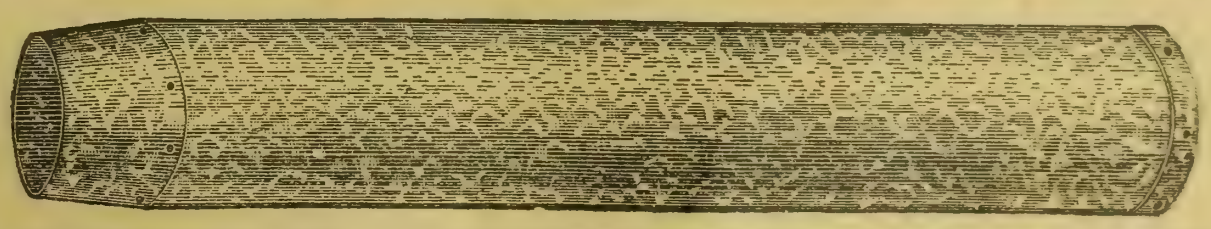
20,000 feet 3, 3½, 4-inch Pipe, cut to 16, 18 or 20-foot joints, for telephone poles, fitted up with cross-arms for that purpose.

We are offering special prices to save handling this pipe. We will fill your order on any amount or size of pipe. Small orders will secure the same attention as large ones. We carry a full line of pipe fittings at reduced prices. Mail orders promptly filled. Check or money orders received. Call and examine this pipe at our plant.

PHONE OR WRITE FOR PRICES
Take Santa Fe Ave. or Huntington Park car at 7th and Broadway. Get off at Bay St.

ADAMS PIPE WORKS, 2025 Bay St., F 1917 Broadway 1274 Los Angeles, Cal

SAVE YOUR TIME WATER and GRADING BY IRRIGATING WITH AMERICAN SURFACE IRRIGATION PIPE



The **PIPE RECOMMENDED BY ALL USERS.** It is the **ONLY SCIENTIFICALLY CONSTRUCTED SURFACE IRRIGATION PIPE** on the market. **THERE'S NO ROUND SEAMS TO LEAK,** retard the flow of water or weaken the pipe. This pipe is easily handled and cheaper than flumes. It will last a life-time. For irrigating alfalfa it is the only pipe to use. We make **RIVETED PIPE AND TANKS.** Write for Illustrated Catalogue, also **SPECIAL IRRIGATION FOLDER** which may mean much to you.

American Steel Pipe & Tank Co., General Offices 342-43 Pacific Electric Bldg., Los Angeles, Calif.

Money Making Little Liners

In this department we will insert your advertisement under a classified head for 1½ cents per word per issue. No ad accepted for less than 25 cents. Our classified columns are the clearing house for our many thousand readers.

LIVE STOCK

Stallions for Sale—Acclimated animals. All harness broken, sound and gentle. Leader 40637. Dapple gray, 8 yrs. old. Ladoga Leon, 66619, 2 years old. Dark gray. Dam weighs a ton. Liberty 74310. Black yearling. These three are registered in the Percheron Society of America. Atwood, bay carriage stallion, 2 yrs. old. Solid color. Sired by Athadon, 1st dam by Junio, son of Electioneer. McKinney Don, 2 yrs. old. Solid bay with black points. Sire Stanford McKinney. 1st dam Belladonna, standard by trotting record. 2nd dam by Athaneer. Both well broken to buggy. Minnewawa Stock Farm, Fresno, Cal.

Grapewild Farm Herd of thoroughbred Berkshires. State fair prize winners. Boars and sows of all ages, unrelated. Address A. B. Humphrey, Mayhews, Sacramento Co., Cal.

Three Half Bred Toggenburg Swiss Milk Does, sired by "Bismarck,' also one three-quarter bred doe kid, 6 months old. Price $20 each, or $75 for all. Full description on application to W. E. Hyer, Hemet, Cal.

Cattle—Help us stock our large ranch—pay in cash or in installments. Share in the large profits. Interest guaranteed. Write for free booklet. C. E. Reed, Secy., 710 Grosse Bldg., Los Angeles, Cal.

Three Holstein Friesian Bulls, splendid young animals, for sale. Well marked and subject to registry. Write at once to Geo. C. Roeding, Fresno, Cal.

Belgian Hares—Fine, healthy breeding stock, for sale cheap. Write for your wants and prices. J. A. Reinhart, Hollister, Cal.

Dairy Floating Thermometers and all kinds of supplies for the dairy at Guy F. Kelsey Co., 108 E. 8th St., Los Angeles. Phone Sunset Main 7406.

For Sale—Shorthorn bulls and Berkshire hogs. Bred for size and quality. H. L. Murphy, Perkins, Cal.

WANTED

Local Representative Wanted—Splendid income assured right man to act as our representative after learning our business thoroughly by mail. Former experience unnecessary. All we require is honesty, ability, ambition and willingness to learn a lucrative business. No soliciting or traveling. This is an exceptional opportunity for a man in your section to get into a big paying business without capital and become independent for life. Write at once for full particulars. Address E. R. Marden, Pres. The National Co-Operative Real Estate Company, L 448, Marden Building, Washington, D. C.

Wanted—About 200 good White Leghorn pullets. State age and price. L. W. Holtzclaw, Lakeside, Cal.

Wanted—By young man, position as manager or foreman on fruit ranch. References. Address Box 61. R. F. D., Aptos, Cal.

DAIRY SUPPLIES

Have You a Cow?—Have you a creamery? Have you a cheese factory? Write us. Everything used in either a dairy, creamery, cheese factory, or for handling milk, cream, butter or cheese. We are in a position to quote you prices on entire creamery or cheese-making outfits. We make a specialty of only the latest and best sanitary machinery and supplies. Send us a list of what you want, and we will quote prices which we feel certain will interest you. O. J. Weber Co., 225-227 East Sixth St., Los Angeles, Cal.

GUY F. KELSEY CO.
Full line of dairy supplies. Come in, phone or write. Generous sample of Prosperity Washing Powder given on request. 106 East Eighth St., Los Angeles, Cal. Phone Main 7496.

TREES

Fine Line of Navels, Valencias and Eureka Lemons for delivery spring of 1911. Contract now and get the first choice. The King Citrus Nurseries, Whittier, Cal.

Planters invited to inspect our strictly high grade citrus trees. Robinson Citrus Nurseries, San Dimas, Cal. P. O. P. E. Ry. to Valley Center, four blocks north.

Orange, Lemon and Grapefruit Trees, all first class stock. Special prices to parties planting groves. Edward A. Carvel, 1454 Oak St., Glendale, Cal.

For First Class Valencia and Navel Orange Trees and Eureka Lemons, see A. G. Snow, Oxnard, Cal.

Low Prices on advance orders of deciduous fruit trees. Ballou's Nursery, Pasadena, Cal.

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For Sale—Agricultural implements, vehicles. Splendid values, lowest prices, liberal credit. See us without fail before buying. Catalogs mailed out of town customers. Write us describing what you wish to buy. When in the city a personal call will show the largest stock and assortment in the Southwest. Arnott & Company. Established 1892. 112-118 South Los Angeles Street, Los Angeles.

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Ahuacate Seeds, Avocado, Alligator Pear, Persea gratissima. Price reduced to $3.75 per 100 and $33 per 1000. Germination guaranteed if our directions are followed. Montarioso Nursery, Box 1500, Santa Barbara, Cal.

Plants of all kinds, wholesale and retail, at Las Palmas Greenhouses, Palo Alto, Cal. Contracts solicited. Let us know your needs at once.

FOR RENT

Imperial Valley Fruit Ranch to Let—160 acres in early table grapes, apricots, alfalfa and cotton; 2 miles from county seat. Tenant must have experience, and $3000 capital to furnish labor. Address Horticultural Dept., Box 2. El Centro, Cal.

Farm to Let—Two orange groves, 10 and 15 acres, two or three years to right party. Converse, Glendora, Cal.

MISCELLANEOUS

Free—"Investing for Profit" Magazine. Send me your name and I will mail you this magazine absolutely free. Before you invest a dollar anywhere, get this magazine—it is worth $10 a copy to any man who intends to invest $5 or more per month. Tells how $1,000 can grow to $22,000; how to judge different classes of investments; the real power of your money. This magazine for six months free if you write today. H. L. Barber, Publisher, R. 430, 28 W. Jackson Boulevard, Chicago, Ill.

FARM LANDS FOR SALE.

For Sale—

OWENS RIVER VALLEY

RED APPLE LAND.

Los Angeles' new water supply from the Owens River Valley opens up the most fertile land in all of Southern California. This land is wonderful in its productiveness, beyond belief. Potatoes that run as high as 500 bushels to the acre, with an average of 330; alfalfa, 3 tons to the cutting; timothy, with 10-inch heads; corn, 70 bushels to the acre, and famous for hogs; the world's prize at the Portland Exposition for honey; the finest apples grown on the Pacific Coast, Spitzenbergs and Winesaps, the famous varieties; no better poultry country in California.

No other land in California can compare with it; foothill land with gentle slope, giving perfect drainage; one of the most complete gravity concrete water systems in the State now being installed by men whose irrigating systems in the orange belt of Southern California stand as models for model orchard irrigating. Water from the hundreds of lakes and the high Sierras, giving an inexhaustible and assured supply. The Southern Pacific's new main line to the East now runs through the valley. The choicest apple land will be subdivided into ten, twenty and forty-acre tracts.

The elevation is 4000 feet. Typical California summers, with no intense heat, and with the thermometer at 10 deg. above at the coldest. Practically no rain—about four to five inches during the entire year; 300 days of sunshine, absolutely no fog; has the finest scenery in America; the high Sierras at your very door; trout streams within walking distance. You can leave the valley in the morning, go to the summit of the Sierras, 14,000 feet elevation, camp at one of the beautiful mountain lakes and return to your home the same evening.

This land is not for speculators, but for real serious farmers, who know the value of good land and water when they see them. Will send pamphlet and pictures upon application.

The JAMES R. H. WAGNER CO.,
Room 10,
329 So. Hill St.,
Los Angeles, Cal.

Please mail, without expense to me, your printed matter on Owens River Valley lands.

Name.....

Address.....

For Sale—Rancho Summermont of 44 acres, situated in the beautiful and fertile El Cajon Valley, eighteen miles from San Diego. Ranch is improved with 9 room house with good barn and outbuildings, is irrigated with good well and new engine and pumping outfit, and two and one-half inches flume water. Has 12 acres citrus fruits, about 12 acres in deciduous fruit, shade and ornamental trees, with magnificent palm drives. Balance of land is used for grain. This would be an ideal location for a sanitarium, as well as for a private home. For further particulars address Summermont Ranch, El Cajon, San Diego Co., Cal.

For Sale—

FOOTHILL RANCH.

160 acres, $1,500. Five miles from railroad station. 2,000 cords of wood sold to be cut this winter. House, barn. Located on the Kings River. Write or phone when you wish to see it.

P. J. PIERCE,
Sanger, California.

For Sale—
THE ORANGE GROVE MAN.
Large list of orange groves in best districts. Seven years' experience in growing oranges.

A. W. RICHARDS,
THE ORANGE GROVE MAN,
Claremont and Pomona, Cal.

Apple Orchards—Large and small, in the only apple producing section in California. The greatest section west of Missouri River. Write for booklet. Geo. W. Sill & Co., Watsonville, Cal.

For Sale—Near Lancaster, Cal. Bargains in improved and unimproved land. Also relinquishments for sale or trade. Some homestead land. A. S. Burnham, Box 451, Lancaster, Cal.

San Diego County! My splendid weekly newspaper will tell you about this great county and superior climate. 16 weeks for 15c. H. P. Rising, publisher, Escondido, Cal.

Ranch, 640 acres, highly improved, buildings, fruit, alfalfa. $35 acre. L. G. Dawson, Tipton, Cal.

For Sale—20 acres of orange land, one mile from Klink; 11 acres set to Washington Navels. Write E. Wetzel, Klink, Cal.

For Sale—At half value, 13 acres Sutter County's best land. For particulars inquire Stanley Scott, Los Molinos, Cal.

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Catalogues for the seed and nursery trade, the live stock and poultry industries, are a specialty with us. Two thousand illustrations to select from. Write for prices and samples. The Kruckeberg Press, 237 Franklin St., Los Angeles.

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If you want to buy a small ranch, orchard or large farm, write us, explaining exactly the kind of property you are looking for.

We deal in farm lands only, and make a specialty of Southern California and San Joaquin Valley farms.

With the hundreds of different farms listed in our office, we are naturally able to find the bargains, and it will pay you to investigate our lands.

If you want to trade your farm for another farm, tell us about it, giving us all the details. We are fully equipped to handle your property.

The JAMES R. H. WAGNER Co.

Room 10.
329 S. Hill St., Los Angeles.
Members L.A.R.B.

For Sale—A 20-acre farm for $20 cash and $20 a month; possession now; $90 to $125 per acre; your crops pay for the land. Rich, level land for alfalfa, oranges, almonds, grapes, cows, chickens; abundance of ditch water, for irrigation, for $1 an acre a year. Where else can you get this? In Oakdale Colony, near good town and railroad station. Climate delightful. T. Wiesendanger, 207 S. Broadway, Los Angeles, Cal.

For Sale or Exchange—Property of every description in every direction. With my "Resident Agents In All California Districts" gives me positively the largest list of properties for sale and exchange in California. It will pay you to see me before buying or exchanging your property. A. D. Bowman, 503 Higgins Bldg., 2nd and Main Sts., Los Angeles, Cal.

FARM LANDS WANTED.

If you wish to sell or exchange your farm, write to this office, giving all particulars. Our business is entirely farm lands in California. We have a half dozen salesmen, all of whom are farmers, and devote their entire time to buying, selling and exchanging farms.

If you want to trade your farm for some other farm, or even city properties, give us all the details; or, if you wish to purchase a new farm or ranch, ask us to send you a list of our different properties.

The JAMES R. H. WAGNER Co.

Room 10.
329 S. Hill St., Los Angeles.
Members L.A.R.B.

Farms Wanted—We have direct buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property Free. American Investment Association, 12 Palace Bldg., Minneapolis, Minn.

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For Sale — Second-hand windmills, tanks, pumps, engines.
OUR SPECIALTY—NO WORRY, MATERIAL GUARANTEED.
Windmill outfits, 8, 10, 12 ft. sizes, tanks to suit.
GASOLINE AND DISTILLATE ENGINES.
Have four great big snaps, as follows: 2 H. P. with jack and pump complete, $69; 4 H. P. Stearns engine; 5 H. P. R. & V., no better made; 6 H. P. Fairbanks. Another 26 H. P. Foos, cylinder and piston, good as new, $390. Can you beat it? 25 H. P. engine and hoist, brand new, runs perfectly, cost $1,200, for $600 cash. Will take smaller engines, horses or auto as part payment on the larger ones.
TANKS.
100 second-hand tanks, all sizes; no worry, save you half; some new ones at half price.
ODDS AND ENDS.
200 ft. 10 inch pipe, do for flume, $16; 4 inch casing at 14c, 6 inch casing 29c, 8 inch casing 40c; 300 gallon rendering kettle, $10; 2 H. P. steam engine and small boiler; 2 ton truck, $25; 2 horse tree sprayer; 2 circular saws; windlass; stock tanks.
TYPEWRITER.
$100 Visible Oliver, guaranteed, $24; Smith Premier with $20 tabulator, $27.50.
60 H. P. AUTOMOBILE.
Cost $4,000, engine mechanically perfect, at $675; worth more to dealer to sell again.
Outside shipments receive personal and prompt attention. Our prices are the very lowest good serviceable material can be furnished for. Get others' prices, then compare material and prices with us. Checks accepted.
Call or write office of Demmitt Co., 120 North Main St., Los Angeles.

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KILL BLOOD SUCKERS.
PROTECT YOUR HENS AND CHICKS.
I have discovered a simple, harmless way of destroying and preventing lice. Easily applied, cheap and effective. Postal brings the secret. H. S. Thornberry, Lordsburg, Cal.

Special Incubator Offer—We are overstocked on 130-egg size Success Incubators. We offer 50 of them at $10 each as long as they last; regular price $14. Order now. E. E. McClanahan Incubator Co., 112 East 8th St., Los Angeles, Cal.

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Wanted—10,000 Citrus Trifoliata stock for budding. Please state age, size and price. Montarioso Nursery, Box 1500, Santa Barbara, Cal.

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How to Make Money—Mrs. A. Basley's Latest Poultry Book is without exception the most wonderfully complete manual on the subject of successful poultry management ever written. The secret of how to raise every turkey hatched and the "Basley Formulas," now published for the first time are worth many times the price of the book. The "Western Poultry Book" is a practical book by a practical woman. Price $1. Address Mrs. A. Basley, Box 77, Venice, Cal.

The Goodacre Strains—Our Red chicks are hatching strong, only $12 per 100. Do you want Ancona chicks at $15 per 100 or 2 each? How about yearling males at $3 Leghorns and Anconas; $5 to $7 for R. Reds and Buff Orpingtons? Eighteen Leghorn hens and cock for $20; R. I. Red young cock and four hens, $12; Buff Orpington young cock and four hens, $14. Write for our summer price list. Goodacre Bros. Compton, Cal.

Olsen's White Leghorns. Day old chicks and hatching eggs are money makers for you. They lay and pay because they are bred that way. Book orders now for Fall Spring and Summer deliveries. Address Olsen's White Leghorn Ranch, Sunnyvale, Cal.

BONNELL'S S. C. BLACK MINORCAS WIN EVERY TIME.
At Los Angeles Show, 1911, every first premium and two silver cups; two specials for best male and female. Place your order for fall cockerels. C. C. Bonnell, 2919 Bright Ave., Los Angeles, Cal.

For Sale—Pullets, cockerels and yearling White Orpingtons (Cook strain), Black Minorcas (Northrup strain), White Minorcas, R. I. Reds (Tompkins strain), prize bred. C. U. Chamberlin, Los Gatos, Cal.

S. C. White Leghorn cockerels from 1st prize egg hens; also a few Buff Orpington cockerels and pullets, all over three months old. Price right. L. T. Smith, Beaumont, Cal.

Day-Old Chicks, Barred Rock and White Leghorns, good laying strain. Order now to insure early fall delivery. The Fairmount Hatchery, 29 B Rural No. 1, Santa Cruz, Cal.

Poultry Wanted—We pay the highest market price for all the local poultry we can get, no matetr how large the quantity; also fresh ranch eggs. We remit immediately. Allaway & Layton Co., 607 E. Third St., Los Angeles, Cal.

Orpingtons—High class Buff and White Bred to lay from prize winning stock. 500 pullets and cockerels for sale. Reasonable prices. Will mate pens with unrelated males. Write Mrs. S. Swaysgood, Route 1, Healdsburg, Cal.

Just Hatched White Leghorn Chicks every month, from select, heavy laying, mature stock. No pullet eggs used. Lodi Hatchery, E. Elm St., Lodi, Cal.

White Leghorns—Buff Orpingtons. Bred for beauty and great egg production. Grand lot of both old and young stock for sale. Prices reasonable. Write your wants. Mountain Poultry Farm, Box H, Irvington, Cal.

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Rose Comb R. I. Reds—A few fine breeding cocks for sale at bargain to make room. W. H. Pickering, 984 E. 55th St., Los Angeles, Cal.

500 Just Hatched White Leghorn Chicks from select, heavy laying, mature stock. Ready for delivery August 31. Thomas Hawley, 504 E. Elm St., Lodi, Cal.

Illustrated Booklet—How I Raise Pheasants includes names of all known varieties, 25c. Prices free. H. W. Myers, Box 1098, Tacoma, Wash.

The Luedkes—Incomparable R. I. Red, high record layers—now booking orders for hatching eggs for fall delivery. P. O., Anaheim, Cal. Route 1.

Thoroughbred Black Minorca Cockerels, $2 up; eggs, $1.50 per 13. Mrs. W. L. Beckland, Santa Ana, Cal.

For Sale—White Orpington cockerels, genuine Cook strain, very fine. A. H. Ellingame, Westminster, Cal.

Rose Comb Black Minorcas, nine years bred. Stock and eggs in season. Elearo Minorca Farm, R. D. 1, Los Angeles, Cal.

The Great Navajo Strain of Barred Rocks. Eggs $3, cockerels $3. E. E. Hardy & Son, Santa Ana, Cal.

For Sale—Kellerstrass Crystal White Orpington eggs, $2 per 13. R. L. Warren, R. F. D. 1, National City, Cal.

S. C. Rhode Island Reds. Fine pullets and cockerels for sale. Prices reasonable. L. Haynes, Madera, Cal.

White Fantail Pigeons—$1 per pair for squabs. Chas. Neidhardt, R. 4, Box 8, San Jose.

Good Barred Rock cockerels, $1.50 to $3 each according to age and quality. L. Hawley, Madera, Cal.

DUCKS

We have a few genuine "Rankin" strain Mammoth Pekin drakes to spare that will add a pound each to your next lot of ducks. Grand big fellows, fit to show. Price two for five dollars each. Eggs from our best pens, $10 per hundred, $2 setting. Long Beach Poultry Ranch, Long Beach, Cal.

Quality is what you want. Mammoth Pekins and choice Indian Runner drakes and trios. Mrs. Benj. G. Johnson, Rural Route 1, Vacaville, Cal.

White Indian Runner, Fawn Indian Runners, Aylesbury and Buff Orpington Ducks, stock and eggs. Catalog free. Caldwell Bros., Los Angeles, Cal.

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About the only way of giving na-
ural protection to the lady birds is
he planting of corn or some other
eavy growing plant in which they
ay hide during the hotter weather.
Vhen gathered in the Sierra Nevada
n the springtime they are placed in
old storage to keep as nearly dor-
ant as possible and later liberated
n the fields. We have asked the
tate commissioner as to best methods
or affording protection for these val-
able little assistants.

he Dasheen.

The Cultivator has had inquiry re-
arding a tuber called the dasheen,
ut we are unable to get any very
efinite information regarding this and
s commercial value. The Depart-
ent of Agriculture is testing it out
nd no doubt within a year or two will
e able to distribute sufficient for ex-
erimental plantings over the country.
Ve have from Mr. R. A. Young,
cientific Assistant of the Bureau of
lant Industry, the following:

"We do not know at present of any
ersons who are in position to supply
e most desirable variety of dasheen,
e one that has been referred to par-
cularly in the various accounts that
ave appeared in the magazines and
ewspapers. The department is grow-
g this variety, but as a sufficient
ock for distribution has not yet been
ccumulated, we shall use all of this
ear's crop for further propagation
xt season. Applications from exper-
enters who desire to grow the
sheen will be filed and the material
ll be sent as soon as available."

ertilizing Valencias.

We have a letter signed merely
lendora" in which the writer says
has 700 five-year-old Valencias on
ich he has put seven carloads of
rnyard manure with tankage. He
shes to know if this will cause puf-
g if put on in August, also what is
e percentage of nitrogen, phosphates
d potash in one ton of fertilizer,
od cow and sheep manure, alfalfa
d tankage which comes from a
ughter house.

We do not think there is any danger
oranges puffing from such fertiliza-
n, but as to giving any estimate of
ntent of various elements, that is
possible from information given.
d "Glendora" shown us the courtesy
signing his name, we could have
itten him and asked more particu-
s.

alfa on Damp Land.

have a field of alfalfa which sub-
igates for some weeks during the
nmer so that the tap roots become
ten up to a foot or so of the surface
ground, thus weakening the growth
plants, and some die. Would it
atly encourage new roots and re-
e the plant to plow the field under
l leave undisturbed for another
r's growth? New plants do well
about two years. How deep should
e plowed?—M. D. W., Livingston.

Ve do not believe alfalfa can be
cessfully grown under such condi-
ns. Drainage by tiling or open
ches might put it in condition so
t alfalfa would grow excellently.
less this is done, we would choose
er crops which would stand wet
t, as alfalfa never will. Reseeding
l not produce enough of a crop to
.

ails in Spring.

What will destroy water snails
und spring which is kept well
aned and aired?—Subscriber,
aldsburg.

Ve would advise placing a few
ps of quick lime in the water
und the spring. Bluestone put into
water would accomplish the same
pose, but if stock is watered there
might prove injurious. The lime,
however, would only sweeten condi-
tions and probably be beneficial.

Aphis on Apples.

I enclose apple twig infested with small green lice. What are they and what will control them?—Subscriber, San Luis Obispo.

Spraying with tobacco mixture or with kerosene emulsion will destroy these aphids, but as they reproduce with great rapidity another generation will appear in a few days and spraying should be repeated.

WITTE ENGINES

GAS—GASOLINE—DISTILLATE—NAPHTHA

Do the work at average cost of **One Cent** per horse power hour. Immense saving by our method of "pre-heating" the fuel. Built so perfectly that repairs cost less than **$1** per year average. Every valve is **vertical** and will not wear on the stem or slip inside. Freezing cannot injure bed as **cylinder and base** are **separate.** Hammered steel cranks, cut gears, etc.

GUARANTEED FIVE YEARS

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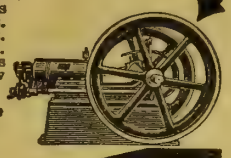

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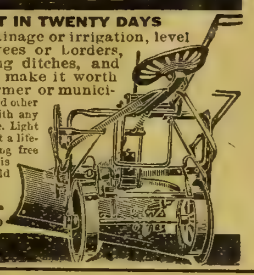

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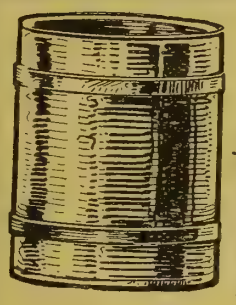

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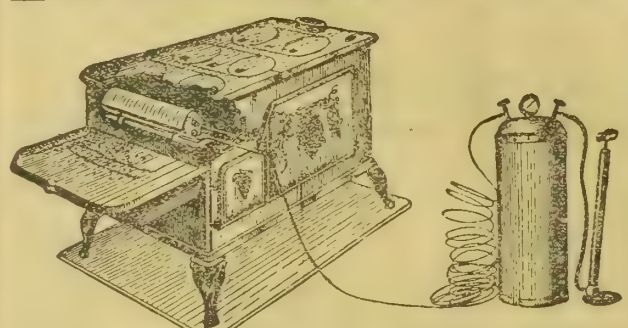

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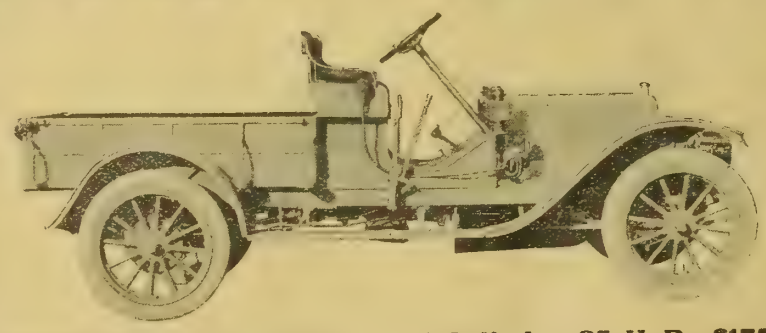

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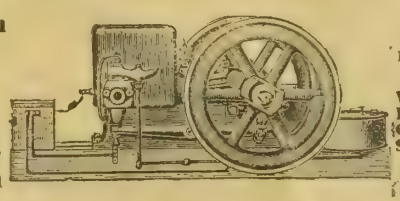

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Household Department

THE HORSE AND THE DOG AND THE MAN.

The horse and the dog had tamed a man and fastened him to a fence.
Said the horse to the dog, "For the life of me, I don't see a bit of sense
In letting him have the thumbs that grow at the sides of his hands, do you?"
And the dog looked solemn and shook his head and said, "I'm a goat if I do."

The poor man groaned and tried to get loose and sadly he begged them, "Stay!"
You will rob me of things for which I have use by cutting my thumbs away!
You will spoil my looks, you will cause me pain! Ah, why would you treat me so?
As I am, God made me, and he knows best! Oh, masters pray let me go!"

The dog laughed out and the horse replied, "Oh, the cutting won't hurt! You see
We'll have a hot iron to clap right on, as you did in your decking of me!
God gave you your thumbs and all, but still the Creator, you know, may fail
To do the artistic thing, as he did in furnishing me with a tail!"

So they bound the man and cut off his thumbs, and were deaf to his pitiful cries,
And they seared the stumps and they viewed their work through happy and dazzled eyes.
"How trim he appears," the horse exclaimed, "since his awkward thumbs are gone!
For the life of me I cannot see why the Lord ever put them on!"

"Still it seems to me," the dog replied, "that there's something else to do;
His ears look rather long to me, and how do they look to you?"
The man cried out, "Oh, spare my ears! God fashioned them, as you see,
And if you apply your knife to them you'll surely disfigure me!"

"But you didn't disfigure me, you know," the dog decisively said,
"When you bound me fast and trimmed my ears down close to the top of my head!"
So they let him moan and they let him groan while they cropped his ears away,
And they praised his looks when they let him up, and proud indeed were they!

But that was years and years ago, in an unenlightened age!
Such things are ended now, you know; we've reached a higher stage!
The ears and thumbs God gave to man are his to keep and wear,
And the cruel horse and dog look on and never appear to care!
S. E. Kiser, in Chicago Record-Herald.

THE UNEXPECTED CHALLENGE.

It all happened so long ago that I can set down, without fear of raking up old scores, a certain adventure which befell me when I was a student at Leipzig.

Max von Bestoff was an officer in the German army and, it was said, had risen from the ranks to his present position through sheer force of push and persistence. He was tall, good looking, with a voice of one accustomed to command (which awed the unwary not a little) and was, by reputation, amazingly arrogant and insolent. He could convey various impressions without spoken word by a look or gesture, and, dressed in his fetching soldier's uniform, with an air of complete self-posession and assurance, it was, perhaps, not strange that he was a conspicuous figure in Leipzig, as he walked firmly and swiftly through the street, his sword swinging jauntily at his side and his gold spurs clicking.

I remember him well, one glorious winter's day, when Bertha Wallace and I were skating in the great park in Leipzig. The band was playing gay melodies, and the wind blowing keen on my face aroused in me a hundred boyish dreams and sent the blood coursing through my veins. Bertha was the daughter of the American consul, but just at that particular period in my career she seemed to my luxuriant fancy more a goddess than an agreeable young woman with china-blue eyes, a babyish mouth and a tiny nose; though a photograph of her (which my wife unearthed from a trunk in the garret the other day) shows her face to have been not without character. We had paused a moment in our sport to buy and eat a pretzel, and happened to stop near a young German in soldier's uniform who was helping a pretty girl put on her skates. He had just fastened one skate when he turned to find Max von Bestoff beckoning to him. It is well known, of course, the world over, how strict are the rules of the German army, and the young soldier, humiliating as it was, found himself obliged to leave his pretty Fraeulein with one skate on and one off, while he went meekly to fasten on the skates of his superior officer, von Bestoff, who deigned not so much as a "thank you," but glided off, to the admiration of the crowd, as though life held no problems and presented no difficulties for him. The poor soldier had turned scarlet, but came back, and with perfect quiet and restraint finished fastening on the young girl's skates.

"That's von Bestoff all over," remarked Bertha.

"An infernally insolent and ill-bred thing to do, and no civilized man with a spark of decency in him would play such a trick," I answered, for I found myself unable, in this noble land, to shed the American man's sense of what was due a woman, and the absurd arrogance of some of these German officers stirred an inward fire that I felt might burst forth some day, when I would fling my devil's measure at them with a will.

"Oh," replied Bertha, "but he's so good looking!"

"He's a conceited cur and needs a sound thrashing," I retorted, feeling angrier than the occasion demanded. Bertha looked up at me with mischief in her blue eyes.

"I would like to see you try it—are you proposing to spread the American eagle for his benefit?"

"We shall see," I said, grimly, nettled at her tone, "I've tackled worse problems."

"Oh, I suppose you wouldn't falter before any problem under the sun would you?" she went on, teasingly but just here von Bestoff came toward us, with his arrogant air of importance, and, acknowledging my presence with the slightest possible nod asked Bertha to skate, which stirred my youthful spleen, and I looked after them half in rage, half in despair and longed with every muscle in my body to teach him a lesson then and there. I was very young in those days!

As time went on, von Bestoff seemed more and more to find the Wallace house as agreeable as I found it, and

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to my simple-minded chagrin Bertha one day informed me that she was beginning to see the German in a totally different light, and with a new, keen appreciation. I, on the contrary, didn't find his presence any the more soothing, and when he was about Bertha charged me with looking glum and disapproving; perhaps I did, for I did not care to know any more of von Bestoff than I knew already.

One of his most objectionable tricks was a little habit he had of walking down the street, straight as an arrow, with his head in the air, pretending not to notice who or what was in front of him, seemingly taking it for granted that the crowd would step meekly to one side that he might go on his easy way without let or hindrance. I had taken particular note of this little idiosyncrasy, and made a vow, when the chance offered, to punctuate his stroll by a certain football trick I had learned with profit when left tackle at Harvard not so many years before, and I fancy I was not the only man in Leipzig in those days who had an unholy desire to hack von Bestoff into a shapeless chunk—if the occasion arose.

"Sauerkraut-sausage-eating dog of a German," I would mutter to myself, "swashbuckling about like a peacock in his opera-bouffe uniform, does he suppose for a moment he can awe me with his devil's air of superiority?" For although I had said nothing to Bertha of what was uppermost in my thoughts, von Bestoff's air of budding ownership in regard to her whenever I was present—inspiring at first only flippant jests and laughter—had begun to make me ponder my chances somewhat. Affairs seemed to be taking a very serious turn with surprising suddenness.

Thus, late one Sunday afternoon, I had just left the Wallace house, when, coming directly toward me and heading toward the same house, I saw von Bestoff, with his usual swing and stride, his head in the air, his spurs clicking, and apparently under his customary illusion that I and every one else would gracefully make way for him. I, however, squared my shoulders and walked straight on, and as he swerved not one inch to the left or to the right, neither did I; but, turning suddenly, my burly football shoulder struck him square on the chest, and he staggered back furious and breathless, the unexpected shock of the blow causing him almost to lose his footing. Blind with rage, and savagely accosting me with a string of German oaths, his hand went by instinct and quick as lightning to his gleaming sword-hilt. He hissed something in German to the effect that "Arms don't grow soft at the anvil," and drew his sword half way out of the scabbard. At this, my American blood was up in an instant, and, retorting "Nor do American hearts falter at the sword's point," I struck out with my good right arm straight from the shoulder, and, catching him squarely under the chin, he fell heavily, sprawling his length on the sidewalk. There he lay stunned for a moment, in his fine blue uniform, all faced and slashed with gold, the blood streaming from his face. The sword still hung half way out of its scabbard, and I, leaning forward, quickly drew it out full-length and, taking it in both hands, broke it across my knee; then placing the pieces crosswise on his body, I put my visiting card underneath them and strode off, happy in the thought of assuring Bertha that for once the American eagle had been spread to good purpose.—Country Gentleman.

REMEDIES FOR SKIN TROUBLES.

Some of the best remedies we have for skin troubles are just simple things that can easily be prepared at home. Sulphur is almost a specific for pimples and blackheads and sulphur soap is a great help for this trouble. An excellent salve to use is made by mixing well together one teaspoonful each of lard and flowers of sulphur, but one must be very careful not to get it in the eyes. A good remedy for dandruff is made by beating the white of an egg with three tablespoons of fresh lard and then adding a little bergamot and putting in a small jar for use. A good remedy for tetter is made by mixing well together one teaspoonful of good vaseline with one drop of carbolic acid, and this is also fine for fever blisters. To prevent bed sores rub with alcohol several times a day, and if the sores have already appeared, place a clean sheep skin with the wool side up under the sheet under the patient, as the wool admits the air and ventilates the sores. For salt rheum, slice pokeberry root and fry it in lard, then rub this salve on the hands three or four times a day until relieved. Another good remedy for tetter, eczema and ringworm is made by soaking tobacco in warm water to make a strong tea.

A good remedy for ivy poisoning and other poisonous vines and plants is made by beating green tansy leaves in rich buttermilk until the milk is thoroughly tinctured and bathe the parts often with this mixture until relieved. This same mixture is said to be good to remove freckles, but one of the best remedies for freckles is made with four parts of lemon juice, two parts of sugar and one part boric acid powder.

Feet that perspire freely should be bathed every day in water in which a little alum is dissolved, and then dust a little dry boric powder into the sole of each shoe every morning. There is nothing better to check perspiration on other parts of the body and to destroy the odor than the dry boric powder used freely and there is no better powder to prevent chafing on young children than equal parts of boric powder and pulverized starch, well mixed.

For pimples on the face dissolve a little of this powder in hot water and use it warm night and morning for bathing the pimples. This boric solution is excellent for any irritation of the skin, and especially good for an irritated, itching scalp, when applied every night.—A. M. H.

TO REMOVE IRON RUST.

Make a solution of tartaric acid by dissolving one teaspoonful of the powder in one-half a cupful of water. Dip the spots of rust in this and hang in the sun a few minutes. It will disappear as if by magic. If the rust is of long standing a second application of the solution may be necessary or even a third. This will remove all the color, so it can only be used on white goods. It is harmless to the fabric, is a vegetable acid and acts like lemon, only it is much more powerful.

PROLONG THE LIFE OF A BROOM.

When seventy-five cents has to be paid for a broom that formerly cost fifty cents, and fifty cents for a thirty-cent broom, it behooves one to make them last as long as possible.

Always hang a broom up, or at least stand it on its head. This makes the broom-splints very tough, yet they will not cut the carpet; it also makes the broom last longer, besides always sweeping like a new broom.

Digging asphalt from Trinidad Lake

A roof is only as good as its waterproofing.
Knowing this, will you buy the covering for *your* roof on its "looks" alone, and not know what it is made of?

Genasco
the Trinidad-Lake-Asphalt Roofing

is waterproofed entirely with *natural* asphalt. In Trinidad Lake this asphalt has resisted blazing sun and terrific storms for hundreds of years. It has natural oils that give it lasting life in a roof despite the buffeting of rain, snow, sun, wind, heat, cold, and fire.

Man has tried to *make* lasting waterproofers—and always failed. Ordinary ready roofings show you what happens. They are made of mysterious "compositions" or coal tar; and they soon crack, break, leak, and go to pieces. Yet as for looks, they are mighty good imitations.

The life and backbone of Genasco is Trinidad Lake Asphalt—the *natural* everlasting waterproofer—and that makes Genasco last.

Genasco is made with mineral and smooth surfaces. Guaranteed, of course.

The Kant-leak Kleet waterproofs the seams of roofing thoroughly without the use of smeary unsightly cement, avoids nail-leaks, and gives the roof an attractive appearance.

Ask your dealer for Genasco Roofing, with Kant-leak Kleets packed in the roll. Write us for the Good Roof Guide Book and samples.

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This Letter Typifies the Attitude of All Users

Gentlemen: Elkhart, Indiana.

While in Nevada recently I had occasion to drink out of one of your South African Water Bags. Water from the bag certainly tastes good on the desert. We used one of your 2½ gallon bags and *the water remained cool all day, even though the temperature was over 100 in the shade*, and in the morning I found the water sparkling and as cold as ice water. It certainly is a boon to those living in the arid regions.

Yours Sincerely, W. E. WIDER

FOR SALE BY DEALERS EVERY WHERE
Made by
Adam Appell Water Bag Co., Portland, Or.

San Francisco-Los Angeles Produce Markets

Los Angeles Market

Los Angeles, Sept. 6, 1911.

Butter.

Butter receipts are the heaviest for months, but prices are held firm. Receipts on Tuesday alone were 113,982 pounds.

Prices to trade 2½c in advance of the following Produce Exchange quotations:

Extras	25½
Firsts	25
Ladles	23
Country	20

Cheese.

Local Anchor	16
Oregon Daisy	16½
Northern Fresh	16
Domestic Swiss	18
Imported Swiss	30@32

Eggs and Poultry.

Eggs remain same as last week's quotations, with receipts rather light.

Paying prices f. o. b. Los Angeles are:

Local ranch, candled	34
Case count buying price	30
Eastern	25@26
Pullets	20

Dealers pay for live poultry f. o. b.:

Hens, per lb	15
Roosters	6
Broilers	14
Fryers	12
Roasters	14
Turkeys	23@27
Ducks	12
Geese	10
Guinea hens, doz	4.00
Squabs, doz	1.75

Live Stock.

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs	7½
Prime steers	6
Heifers	6
Calves, per lb	6½
Sheep, ewes, per head	4.75
Lambs, per head	3.75@4.25
Wethers	5.00@5.50

Potatoes.

Wholesale prices are:

Sweets, yellow, lb	2½@3¼
Burbanks, lug	1.50@1.75
Highlands, clt	1.75@1.85

Onions.

Wholesale quotations:

Australian Red, ctl	1.75
Silverskins, sk	1.50
Yellow Danvers, clt	1.25
Garlic	5@6

Vegetables.

Wholesale quotations:

Artichokes, northern, doz	75@1.00
Beets, doz bunches	20@25
Bell peppers, lb	4@5
Beans, wax	3@5
Beans, Limas	3@4
Green chilis	3@5
Chilis, dried	15@20
Cucumbers, lugs	35
Cabbage, sack	80@90
Cabbage, red, lb	3
Cauliflower, doz.	1.50
Celery, new, crate	2.25
Carrots, sack	1.00@1.15
Corn, lug	40@45
Egg plant	3@5
Horseradish lb	12½
Onions, green, doz bunches	20@25
Kohl-rabi, doz bunches	40
Leeks, doz.	45@50
Lettuce, crate	1.00@1.25
Mushrooms, basket	3.50@4.00
Oyster plant, lb.	5@6
Okra	5@6
Peas, lb	5@7
Parsley, doz bunches	25@30
Parsnips, doz bunches	45
Radishes, doz bunches	15@20
Rhubarb, Strawberry	1.00@1.25
Spinach, doz	20@25
Squash, summer	25@30
Spearmint, doz	25@30
Tomatoes, lug	25@40
Turnips, sack	1.00@1.25
Watercress, doz	25@40

Citrus Fruits.

Valencias	2.75@3.50
Grapefruit	1.75@2.75
Lemons	2.00@3.75
Limes, hundred	1.25

Fresh Fruits.

Wholesale prices on the market are:

Apricots, crate	1.25@1.50
Apples, W. Astrachan	1.25
Apples, Alexanders	1.00
Apples, Belliflowers	1.25@1.35
Apples, Crab, lug	1.60
Bananas	4
Casabas, crate	1.50
Cantaloupes, small	75@1.00
Cantaloupes, large	1.25@1.75
Figs, box	75@1.25
Grapes, Thompson Seedless, lb	3
Grapes, Black, crate	1.50
Grapes, Malagas, lug	90@1.00
Grapes, Tokays	1.50
Loganberries	6@7
Nectarines, lug	1.25@1.50
Peaches, lug	50@75
Pineapples	7@8
Plums, Clymans, lug	1.50
Plums, Satsuma	90@1.00
Plums, Tragedy	1.50
Plums, Burbank	75@85
Plums, Green Gage	1.75
Prunes, Simoni	1.25@1.50
Pears, Bartlett, lb	6@7
Blackberries	5@6
Raspberries	10@11
Strawberries	4@6
Watermelons, lb	¾@1

Dried Fruits.

Wholesale prices to retailers are:

Evaporated Apples, fancy, lb	15
Apricots	16@17
Figs, box	1.65@2.00
Peaches	12½@13
Nectarines	12
Pears	12@13
Prunes	10@16
Plums	10

Beans Dried.

Wholesale quotations:

Limas	6.75
Black eyes	4.55
Pinks	5.25@5.35
Lady Washington	4.25
Small white	4.10@4.25
Garvanzas	4.50
Bayous	4.50@5.00
Lentils	6.00@7.00
Mexican Reds	4.75@5.00

Nuts.

Wholesale quotations:

No. 1 soft shell walnuts	18
Almonds, IXL, lb	19@20
Pecans, polished	15@17
Peanuts, Eastern	8
Peanuts, California	6
Pine Nuts	18

Honey.

Wholesale quotations:

Extracted water white	8
Extracted light amber	7
Comb water white	16@17
Light amber	13@14
Beeswax	30

Hay.

Buying prices f. o. b. cars Los Angeles are:

Barley hay	11.00@13.00
Wheat hay	11.50@12.50
Tame oats	15.00@16.00
Alfalfa	12.50@13.50

Grain.

Wholesale selling price f. o. b. Los Angeles:

Wheat, new, cental	1.70@1.75
Corn	1.70@1.95
Kaffir	2.10
Millet	3.75
Popcorn	4.75@5.00
Egyptian corn	1.65
Red oats	1.80
Seed barley	1.50
Milo	1.95

Feed Stuff

Wholesale selling price f. o. b. Los Angeles:

Alfalfa meal	1.15
Beef scrap	3.10
Cracked corn	1.90
Cracked wheat	1.85
Shorts	1.95
Bran	1.70
Oil cake meal	2.50
Feed meal	1.95
Rolled Barley	1.75
Middlings	1.85

San Francisco Market

San Francisco, Sept. 5, 1911.

Butter.

Butter shows slight change in quotations and a general firmness prevails.

Prices to trade 2½c in advance of the following Produce Exchange quotations:

California extras, lb	26
Prime firsts	24½
Firsts	24
Seconds	22

Cheese.

Cal. flats	11@14
Cal. Y. America, fy, new	14@15½
Oregon, fancy	13½

Eggs and Poultry.

Eggs are generally firm and rather light receipts. A slight advance is noted on extras.

Official quotations of the San Francisco Wholesale Dairy and Produce Exchange are:

Fresh ranch extra	31½
Prime firsts	28
Firsts	27
Seconds	19½
Eastern seconds	15
Select pullets	23
Hens, doz	4.00@9.00
Fryers, doz	4.50@5.50
Ducks	4.50@7.00
Broilers	2.50@4.00
Roosters, doz	4.00@9.00
Geese	2.00@2.25
Goslings, pr	2.00@2.25
Pigeons	1.50@2.25
Turkeys	25@30
Squabs	2.00@2.50

Live Stock.

San Francisco prices, gross weight:

Steers	4@5½
Cows and heifers	3@4½
Calves, lb.	5@6¾
Hogs	5@7½
Wethers, No. 1	4@4¼
Milk lambs	5@5¼
Ewes, No. 1	3½@3¾

Potatoes.

Wholesale market quotations:

River, whites, ctl	1.00@1.15
Salinas, Burbanks	1.60@1.85
Sweets, ctl	2.00@2.15

Onions.

Yellow, new	70@75
Garlic, lb, new	3@4

Vegetables.

Wholesale quotations:

Asparagus, box	1.00@1.75
Beans, string, sk	1.00@1.25
Beans, wax	1@1½
Limas	3@4
Bell peppers, box	75@1.00
Cabbage, ctl	75@85
Carrots	70@75
Cucumbers, box	40@50
Corn, sack	75@1.25
Chili peppers, box	30@50
Celery, crate	1.50@2.50
Egg plant, box	50@60
Cauliflower, doz	50@60
Lettuce, crate	75@2.00
Okra, box	65
Peas, sack	2.00@2.25
Hubbard squash, sack	1.00
Summer squash, lug	25@35
Tomatoes, box	20@40
Turnips	60@75

Citrus Fruits.

Valencias	3.50@4.50
Grapefruit	1.50@3.50
Lemons	1.50@5.50
Limes, Mexican	5.50@6.00

Fresh Fruits.

Apricots, crate	65@1.00
Apples, Gravensteins	1.50@1.65
Cantaloupes, standard	50@1.00
Cantaloupes, Rivers	1.00@1.25
Nutmegs, large, crate	25@40
Figs, layer, single	40@50
Grapes, blk	50@75
Grapes, Thompson Seed., crate	40@50
Grapes, blk	40@50
Grapes, Muscat, box	75@1.00
Pears, box	50@1.00
Peaches, box	40@65
Plums, box	50@85
Prunes, German, box	60@85
Loganberries, chest	4.00@6.00
Blackberries, chest	5.00@8.00
Raspberries, chest	5.00@8.00
Strawberries	4.00@5.00
Pineapples, Hawaiian	2.00@3.50
Bananas	75@1.50
Watermelons, doz	1.00@2.00

Dried Fruits.

FRUITS—1911 crop, f. o. b., carload lots, per lb.—Apples, 11@12¼c; Apricots, 15¼@18c; Peaches, 10¼@11½c; Prunes, bulk basis, 5½@6¾c; per lb., 4¾@9c, with a premium of ½@1c on large sizes; Figs, 5@6c for White; Pears, 11@14¼c.

RAISINS—1911 crop: Seeded, per pkg.—Fancy, No. 16, 7¾c; Choice, No. 16, 7½c; Loose Muscatels, in 50-lb. boxes—Standard, 4-crown, 6½@7c; do, 3-crown, 6@6½c; do, 2-crown, 5½@5¾c; Seedless—Muscatel, 5¼@5½c; Sultanas, 6¼@6½c; Thompsons, 7@7¾c.

Nuts.

Walnuts, No. 1 soft shell	16@16½
Walnuts, No. 1 hard shell	14½
Almonds, '10, N P U	16@16½
Almonds, '10, Nonp	18@18¾
Almonds, '10, I X L	16½@17¼
Pecans	14@17
Chestnuts, California	6@8
Peanuts	5@5½

Beans Dried.

Limas	5.40@5.50
Pink	4.25@4.50
Black eyes	5.75@6.00
Small white	3.60@3.75
Large white	3.40@3.60
Kidneys	5.40@5.50
Garbanzos	2.50@3.00
Bayou	4.00
Horse beans	2.00@2.25
Red Mexicans	5.25@5.40
Cranberry	3.50@3.75

Hops

Hops, coast, 1910	35@38
Hops, 1911 contracts	43@45
Hops, Oregon, 1911	43@45

Honey.

Water white, comb, '11	15@16
Dark comb	12½
Extracted white, '11	8½@9
Extracted dark	6½
Beeswax, lb	24@30

Hay.

Scott, Magner & Miller say:

Arrivals of hay for the week have been 5,300 tons. On Monday morning the market received over 1,500 tons, and it was thought that perhaps this large amount for the opening of the week would tend to weaken the market considerably, but this did not occur, for the reason that the hay was all in strong hands, and was taken care of at full figures, and no weakness developed in any portion of the market. The following few days arrivals were moderate, and the railroad trucks were cleared of all accumulations.

The market on alfalfa continues fairly steady under the prevailing conditions for this type. There are large lots being offered freely and on a little lower basis than heretofore, as many holders who have not sold their hay appear to be anxious to make a deal for the movement of their hay to market.

We quote the wholesale prices in round lots on today's market as follows, viz:

Fancy wheat hay	17.00@18.00
No. 1 wheat or wheat & oats	15.50@16.60
No. 2 wheat or wheat & oat	12.00@13.00
Choice tame	14.50@15.00
Other tame oat	10.00@13.00
Wild oats	10.00@12.50
Stock hay	5.50@6.00
Alfalfa	9.00@11.00
Straw, bale	55@60

Grain.

Wheat	1.42½@1.47½
Barley, fancy	1.60
Barley, good to choice	1.55@1.57½
Barley, poor to fair	1.47½@1.52½
Corn	1.60@1.62
Oats, red	1.57½@1.70
Rye	1.50@1.60
Mustard, brown	5½
Alfalfa seed	18
Millet	3@3½
Flaxseed	5@5½
Broom corn seed, ton	25.00@30.00

Feed Stuff

Alfalfa meal	15.00@16.00
Bran, ton	28.00@29.00
Feed cornmeal, ton	38.00@39.00
Cracked corn	38.00@39.00
Rolled barley, ton	33.00@34.00
Rolled oats, ton	31.00@32.00
Middlings	32.00@34.00
Oil cake meal	42.50@43.50
Cocoanut cake, ton	24.00@25.00
Mixed feed, ton	26.00@27.00
Shorts	29.00@30.00

Deciduous Fruit Market

Manager F. B. McKevitt of the California Fruit Distributors reports:

Sacramento, Sept. 2, 1911.

The following gives the number of cars of deciduous fruit shipped from all points in California for the week (seven days) ending Friday morning, September 1, 1911:

Peaches—85¼ cars. As indicated last week, there has been a heavy decline in shipments of this variety, amounting to nearly 150 cars. Salways are going forward in a small way and will be in larger volume next week. There are also a few Clings available. Owing to large sales of all varieties of peaches to canners and the low prices prevailing for this fruit in Eastern markets, it is not likely that more than two, or at the outside, three hundred cars of peaches will be shipped from this state during the remainder of the season. The principal supply of Salways during the next week will come from Placer County.

Plums—63¼ cars. This variety shows a falling off of more than 50 per cent from last week. It is not likely there will be more than forty cars shipped out during the next seven days. Most sections have completed the shipment of this variety.

Pears—159 cars. A decline of over 100 cars from last week is noted here. Bartletts are coming almost entirely from the mountain sections. A few fall pears are going forward from the Santa Clara and San Lorenzo districts. Winter Nelis are reported to be of fine quality and a fairly good crop. Comice are generally reported a short crop.

Grapes—343½ cars. Malagas still continue offering from the San Joaquin Valley. Principal movement, however, is in Tokays. Florin and Lodi are now shipping the latter in considerable quantity. Movement will undoubtedly be heavy next week and during the remainder of the season. We have the best crop of grapes ever raised in the state and of the finest quality. Prices will be exceedingly reasonable.

Weather conditions continue fine.

Comparative statement of shipments up to August 26, 1911:

	1910	1911
Cherries	250½	216¼
Apricots	289¾	214½
Peaches	1981¼	1740
Plums	1562	1270
Pears	2083¼	1747¼
Grapes	1098	791¾
Apples	228¼	10
	7484	5990

Citrus Fruit Market

Los Angeles, Sept. 6, 1911.

The large number of small sizes of Valencias is causing a weak condition, excepting on regular size and good fruit. But little "greening" has been noticed, and the general quality of the fruit is of the very best. The general tone of the market is good, and without question the first of November will see everything cleaned up and at fair prices.

The foreigns are in very light receipt and California lemons are going out in finest quality. The result is that for the season of the year fair prices are being obtained. The promise for the next few months is that satisfactory prices will prevail.

Shipments.

Shipments of oranges to date since November 1, 1910: 35,620 cars, lemons 6,212, total 41,832. To same date last season: oranges, 24,472 cars; lemons, 4,413; total, 28,885.

NEW YORK, Sept. 5.—Twelve cars Valencias, one lemon sold. Market doing better on Valencias; strong on lemons. Fair.

VALENCIAS.

	Avge.
Cal. Belle	$5.20
Carmencita, S. T. Ex.	4.00
Colombo, S. T. Ex.	3.60
Trail, A. C. G., Lamanda P.	4.45
Canon, A. C. G., Lamanda P.	4.10
Quail, O. K. Ex.	3.80
Don Quixote, S. T. Ex.	3.10
Lincoln, A. H. Ex.	3.40
Navajo, A. H. Ex.	2.20
Pointer, A. C. G. Ex.	2.50
Hunter, A. C. G. Ex.	2.00
Partridge	3.50
Brown Seal	2.65
Titus Ranch, fy, San Marino G. P. A	2.85
El Toreador, sd, San Marino G. P. A.	2.15
Titus Ranch, fy, San Marino G. P. A.	2.60
Corona, National O. Co.	4.05
Corona Stds., National O. Co.	3.10
San Rafael, H. W., Bailey	4.10
San Pasqual, H. W., Bailey	2.95
Old Mission, fy, Chapman	6.30
Old Mission, ch., Chapman	6.10
Golden Eagle, sd, Chapman	3.60

LEMONS.

Loma	$4.30

BOSTON, Sept. 5.—Six cars sold. Clear

Cream Separators, all sizes and prices. Guy F. Kelsey & Co., 106 East Eighth St., Los Angeles, Cal.

and warm. Strong on oranges, easier lemons.

VALENCIAS.

	Avge.
Sceptre, S. S. Orange	$4.90
Searchlight, S. S., Orange	3.25
Plymouth, A. C. G., Fernando	3.50
Robusta, P., A. H., Pach	2.95
Hobo, P., A. H., Pach	2.30
Glendora Hgts., xc, A. C. G. Ex	3.80
Rooster, S. S., Orange	3.45
Boston, A. C. G., San Fernando	4.40
Robusta, A. H., Pach	3.05
Hobo, A. H., Pach	2.40
Glendora Hgts., xf, A. C. G. Ex	4.50
Evolution, A. C. G. Ex	2.95

LEMONS.

Las Fuentes, Crocker Sperry	$3.70
Pet, S. A. Ex	4.95
Monticito, Crocker Sperry	2.95
Greyhound, S. A. Ex	3.35

PITTSBURG, Sept. 5.—Two cars sold. Market unchanged on Valencias. Warm, clear.

VALENCIAS.

	Avge.
Lincoln, A. H. Ex	$2.25
Arroyo, S. T., Pasadena	1.75
Echo, S. T., Pasadena	2.90

CINCINNATI, Sept. 5.—Warm. Market steady on oranges. Two cars oranges, one lemon sold. (Lemon car withdrawn.)

VALENCIAS.

	Avge.
Pico, S. T., Whittier	$3.00
Cal. Beauty	3.25
Peacock	1.85

NEW YORK, Sept. 1.—Five cars Valencias sold. Market is higher. Fair.

VALENCIAS—	Avge.
Glendora Heights, ch, A. C. G. Ex	$3.50
Evolution, A. C. G. Ex	2.60
Red C, Covina Ex	2.95
Cougar, Covina Ex.	2.95
Red Shield, A. C. G. Ex	3.60
El Azar, A. C. G. Ex	2.60
Pointer, A. C. G. Ex	2.60
Hunter, A. C. G. Ex	2.40
Titus Ranch, fy, San Marino G. P. A.	3.50
Alhambra, S. T., Alhambra	3.40
El Toreador, sd, S. T., Alhambra	2.65

PHILADELPHIA, Sept. 1.—Three cars Valencias, one car lemons sold.

VALENCIAS—	Avge.
Stag, A. C. G., Glendora	$4.50
Hunter, A. C. G., Glendora	2.15
Carnival, S. T., Anaheim	3.00
Pointer, A. C. G., Glendora	2.65
Pointer, A. C. G., Glendora	2.95
Pointer, A. C. G., Glendora	2.65
Mother Colony, S. T., Anaheim	3.90
Stag, A. C. G., Glendora	4.50
Hunter, A. C. G., Glendora	2.10
LEMONS—	
Euclid, ch, Growers F. Co	3.25
Plain, Growers F. Co	1.40
Flower, Growers F. Co	2.50

BOSTON, Sept. 1. — One car sold. Cloudy. Market very strong.

VALENCIAS—	Avge.
Glendora Heights, xf, A. C. G. Ex	$4.35
Evolution, A. C. G., Glendora	3.15
Glendora Heights, A. C. G., Glendora	3.85

PITTSBURG, Sept. 1.—Three cars sold. Market steady on Valencias, lower on lemons. Cool, pleasant.

VALENCIAS—	Avge.
Pet, S. A. Ex	$2.50
El Capitan, S. A. Ex	2.50
LEMONS—	
Camel, Q. C., Corona	2.15

ST. LOUIS, Sept. 1.—Cool, clear. Market strong on Valencias. Three cars sold.

VALENCIAS—	Avge.
El Modena, S. S., El Modena	$1.80
Goldfinch, S. S., El Modena	2.60
El Azar, A. C. G., Azusa	2.75
Transcontinental, S. S., El Modena	2.85
Red Shield, A. C. G., Azusa	2.50
LEMONS—	
El Modena, S. S., El Modena	1.90
El Azar, A. C. G., Azusa	1.95
Monte Vista	1.70
Red Shield, A. C. G., Azusa	2.50
Vista del Mar, Randolph	1.60

CINCINNATI, Sept. 1.—Warm. Market steady on lemons, declining on oranges. One car oranges and one car lemons sold.

LEMONS—	Avge.
Pet, S. A. Ex	$3.05
Pup, S. A. Ex	2.95
Greyhound, S. A. Ex	2.45
Duck, S. A. Ex	2.45
VALENCIAS—	
Pico, S. T., Whittier	2.60

CLEVELAND, Sept. 1.—One car Valencias and one car lemons sold. Market easier on Valencias, higher on lemons. Warm.

VALENCIAS—	Avge.
Red Globe, Riv. Ex., Riv	$2.85
Purity, S. S., Tustin	3.75
Red Hill, S. S., Tustin	3.90
Evergreen, S. S., Tustin	2.55

The unhappy are always wrong; wrong in being so, wrong in saying so, wrong in needing help of others, wrong in not being able to help others. —Mirabeau.

Do your cows milk hard? Send 50 cents for teat expander. O. J. Weber Co., 225-227-229-231 East Sixth St., Los Angeles, Cal.

RIFE RAM

Water in Quantity

all over your farm—house, field or barn—pumped without cost or trouble for you by an automatic Rife Ram. Raises water 30 feet for each foot of fall —no trouble or pumping expense. Satisfaction guaranteed. Booklet, plans, estimate, FREE.

RIFE ENGINE CO., 2491 Trinity Bldg. N.Y.

Wagon Hubs

Why do all manufacturers of the leading farm and freight wagons sold in California—WITH ONE EXCEPTION—use white oak hubs, when it is the most expensive timber used for the purpose?

BECAUSE WHITE OAK is the only hub timber that will stand the peculiar climatic conditions existing in California and the heavy work required of mountain and farm wagons.

BIRCH HUBS have been tried, probably by all manufacturers, and discarded WITH THE ONE EXCEPTION above referred to on account of its softness and liability to "dry rot" when exposed to the weather.

THE WEBER AND COLUMBUS WAGONS manufactured by The International Harvester Company, of America, use White Oak Hubs exclusively.

Sold by

Arnott & Co.

LOS ANGELES

and Leading Dealers Everywhere

SPECIAL FLOWER SEED COLLECTION

WE will mail you a package of FLOWER SEEDS containing a dozen or more old-fashioned hardy Annuals, such as PHLOX, POPPIES, CANDYTUFT, MARIGOLD, COSMOS, MIGNONETTE, Etc.

You can sow this package of choice seeds in out-of-the-way corners of the garden, in odd beds around young trees or on embankments and with little cultivation you will have a mass of gorgeous and continuous blooms, sweetly fragrant, all through summer, till killed by frost.

This package will be sent to any address for 10c. in stamps or coin. Write Dept. A

THE Chas. H. Lilly Co. SEATTLE

For over a decade the leading seedmen on the Pacific Coast.

LILLY'S SEEDS 1912 SEED ANNUAL Free on Request

Bolton Orchard Heaters

The Pioneer—Without a Peer

Indorsed by the California Fruit Growers Exchange

SEND FOR OUR FULL CROP PROPOSITION

$22.50 complete

Triumph Season

For Bolton Orchard Heaters

Saved the Crops in

California Ohio
Oregon N. Mexico
Texas Washington
Missouri Nebraska
Australia

Orders must be placed immediately. The railroads may have a strike

1 gallon size 20 cents each
2 " " 26 " "

DELIVERED

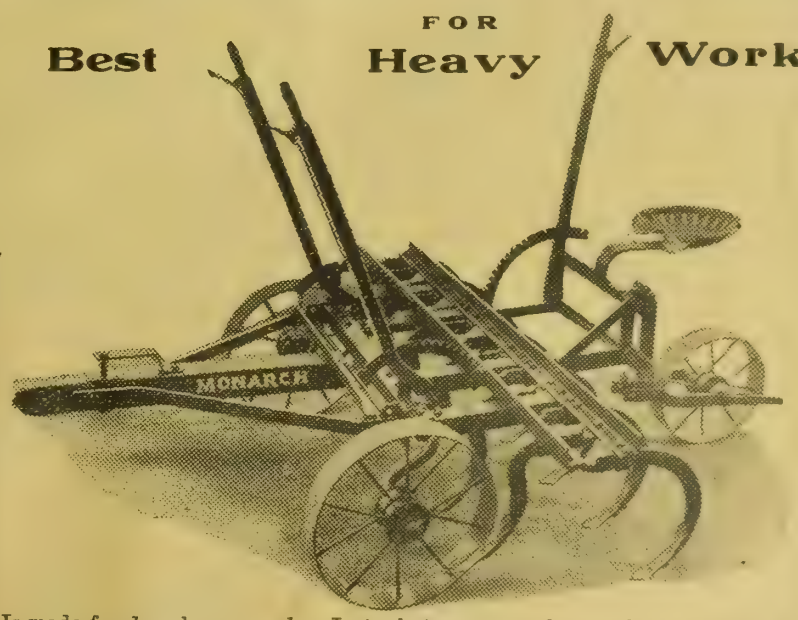
The Frost Prevention Co.

107 So. Broadway, **Los Angeles**
Bank of Italy Building, **San Francisco**

F. N. Hammer Manager

OUR MONARCH CULTIVATOR

FOR Best Heavy Work



Is made for deep heavy work. Just what you want for any hard proposition. While designed more especially for field use, it is now becoming a favorite among orchardists where **deep** cultivation is desired.

Only the best materials are used in its construction and we highly recommend the "Monarch" for heavy service.

Write or call on us direct if your dealer does not have these tools.

Killefer Mfg. Co.

2210 Santa Fe Ave. **Los Angeles, Cal.**

Good Citrus Trees

Superior grown large size trees, up to size now, for immediate or next season delivery. Sweet and sour seedbed stock for fall of 1912. Write your wants.

CHAS. S. McMILLAN

PHONE HOME 3222 300 S. Marengo Ave., Alhambra, Cal.

Genius is common sense intensified. It is the power of making efforts. It is patience. It is the talent for hard work. There is no genius like the genius of energy.

Good manners is the art of making those people with whom we converse feel easy. Whoever makes the fewest people uneasy is the best bred in the country.—Swift.

SAVE MONEY
ON YOUR POULTRY SUPPLIES

Every price quotation here given is positively the lowest for which dependable qualities can possibly be sold.

Thousands of ranchers and poultry raisers concentrate every purchase here because of the great saving in the cost of everything they need.

WE ALSO FEATURE OTHER FAMOUS STAYCO PREPARATIONS FOR VARIOUS USES.

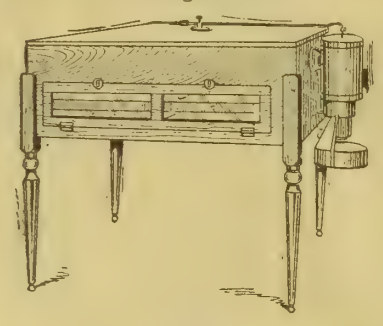
INCUBATORS.

Made in Our Factory—No Middleman's Profits.

This is a line of Incubators for those earnest poultry keepers who want nothing but a reliable Hatcher.

These Incubators are made of wood, covered with heavy galvanized iron, well finished. They are double walled; the space between being packed with cotton batting. The tops are also packed with several thicknesses of the same material to protect them from the changes of outside temperature. The windows are of double glass with air space.

The heater, the Thermostat, the lamp rest, the shield and deflector are of the best throughout.



1911 Model.

	Eggs	Weight	Price
Size A.....	130	60 lbs.	$13.25
Size B.....	140	120 lbs.	15.80
Size C.....	360	150 lbs.	26.00

Everything automatic. Nothing to do but to fill the lamp and trim the wick. They run themselves. We guarantee them to be satisfactory to you, or money refunded.

INSECT POWDER.

For setting hens, young chicks and the dust bath. Death to all vermin. Not intended to take the place of Stayco Liquid Lice Killer, which is always needed in this climate.

2½ lb. package.....$0.31
5 lb. package..... .55

STAYCO LIQUID LICE KILLER.

Kills lice on poultry without contact with the fowls. Spray the inside of the chicken house—fumes do the work, and not injurious to poultry.

1 quart $0.25
½ gallon ..... .40
1 gallon ..... .65

CRUDE CARBOLIC ACID.

To be used as disinfectant, deodorizer, insect killer and general purifier.

½ gallon $0.40
1 gallon ..... .65
5 gallons 2.25

STAYCO SQUIRREL POISON.

Composed of poisoned grain for the destruction of squirrels, gophers, rats, mice, etc.

1-lb. package $0.16
5-lb. package ..... .70

STAYCO ROUP CURE.

A guaranteed preventive and cure for Roup. If it fails we refund your money. Roup is indicated by a watery discharge from the eyes and nostrils, and if not checked, the head will begin to swell. Stayco Roup Cure is a positive cure.

50 cents size.....$0.35
$1.00 size ..... .65

STAYCO CHOLERA CURE.

After testing many different cures, we have found the Stayco Cholera Cure most effective. It is the best cholera remedy for turkeys. It prevents and cures roup, diarrhoea, cholera and other poultry diseases.

25 cents size.....$0.20
STAYCO Chick Feed $2.60 per 100 lbs.

STAYCO BEDBUG KILLER.

Liquid—Non-Poisonous.

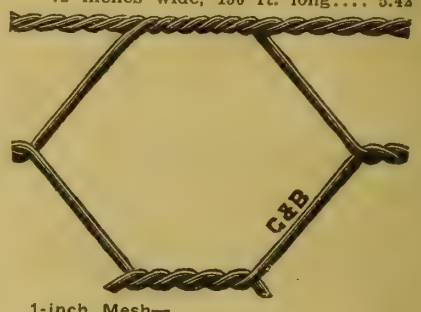
As the name implies, it is non-poisonous. It is also very efficient and safe, if used away from fire and open lights.

Per Gal.....$1.75 Pint.....$0.35

POULTRY NETTING.

Sold in rolls of 150 lineal feet only. Carried in stock all widths, 12 to 72 inches. In ordering specify width, size of mesh, and gauge of wire. We quote only No. 20 gauge wire, which is the common standard used.

2-inch Mesh—	Per roll.
12 inches wide, 150 ft. long....	$0.65
24 inches wide, 150 ft. long....	1.30
36 inches wide, 150 ft. long....	1.95
48 inches wide, 150 ft. long....	2.60
60 inches wide, 150 ft. long....	3.25
72 inches wide, 150 ft. long....	3.75
1½-inch Mesh—	
12 inches wide, 150 ft. long....	.90
24 inches wide, 150 ft. long....	1.81
36 inches wide, 150 ft. long....	2.70
48 inches wide, 150 ft. long....	3.61
60 inches wide, 150 ft. long....	4.51
72 inches wide, 150 ft. long....	5.42



1-inch Mesh—	
12 inches wide, 150 ft. long....	1.69
24 inches wide, 150 ft. long....	3.33
36 inches wide, 150 ft. long....	4.97
48 inches wide, 150 ft. long....	6.61
60 inches wide, 150 ft. long....	8.27
72 inches wide, 150 ft. long....	9.90

Above wire is galvanized before weaving.

Fence Wire and Poultry Netting

Staples, Fence Nails, Bale Ties, Plain Wire, Barbed Wire

WIRE FENCE NAILS.

Kegs contain 10 lbs.

	Per cwt.	Per lb.
20 to 60 pennyweight...	$2.90	$0.03½
10 to 16 pennyweight...	2.95	.03½
8 to 9 pennyweight...	2.95	.03½
6 to 7 pennyweight...	3.10	.03½

WIRE STAPLES.

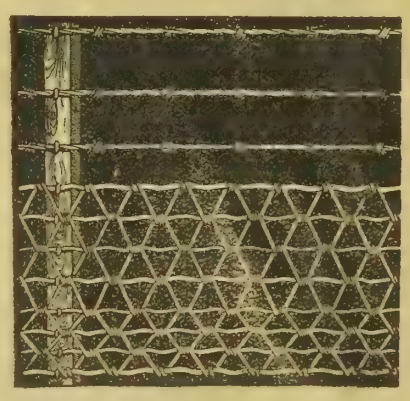
Sizes ¾ and 1½ in., lb.....$0.03¾
Kegs of 100 lbs., lb..... .03¼

HOG FENCE.

Style No. 27.

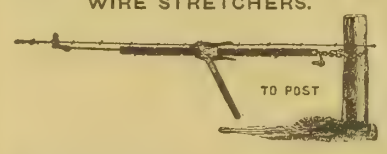
Showing the special diamond mesh Hog Fence with three barbed wires above. Rolls 20, 30 and 40 rods each. Construction same as Farm Fence.

Price does not include barbed wire.



Price same as quoted above for Farm Fence.

WIRE STRETCHERS.



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Our Price .....Each 80c

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	Plain Galvanized.	Plain Annealed.
No. 12, 100 lbs., 3425 ft..	$3.50	$3.00
No. 13, 100 lbs., 4464 ft..	3.60	3.15
No. 14, 100 lbs., 5917 ft..	3.75	3.25
No. 15, 100 lbs., 7300 ft..	4.20	3.40
No. 16, 100 lbs., 9524 ft..	4.35	3.50

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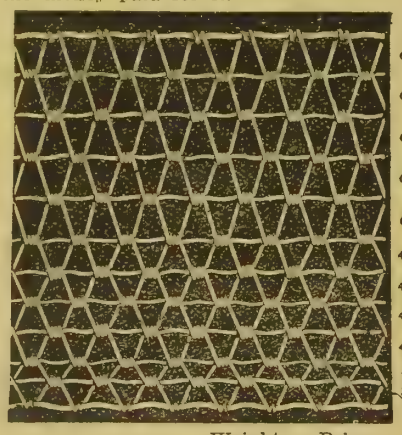
Style No. 27.

Prices f. o. b. factory, Stockton, Cal. Rolls 20, 30 and 40 rods each. Top and bottom wires No. 9 wire, intermediate line wires Nos. 12 and 14. All wires of High Carbon self regulating Coiled Spring. If any of our wire fencing is not satisfactory in every respect, it can be returned at our expense and we will cheerfully refund the money paid for it.



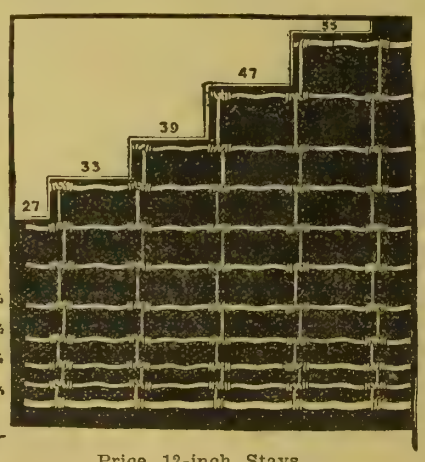
	Weight per rod.	Price per rod.
Height 54 inches...	10.7 lbs.	$0.59
Height 48 inches...	9.8 lbs.	.55
Height 42 inches...	9.0 lbs.	.50
Height 36 inches...	8.1 lbs.	.43
Height 30 inches...	7.0 lbs.	.38
Height 24 inches...	6.3 lbs.	.33
Height 20 inches...	5.4 lbs.	.28

SQUARE MESH FARM FENCE.

Style No. 12.

Prices f. o. b. factory, Stockton, Cal. Height 27 to 55 inches. Rolls 20, 30 or 40 rods each. Stays 6 inches or 12 inches apart. Top and bottom wires No. 9, intermediate line wires No. 11, stay wires No. 12. All wires of high carbon self-regulating coiled spring.

. The Tie in this fence is so constructed that it pulls tighter under strain instead of loosening, as is the case with ordinary fence ties. The greater the strain the tighter the wires lock together. The tie also aids in giving the fence rigidity, and reduces to the minimum the liability of the fence crushing down. Stay wires will not slip.



Price 12-inch Stays.

	Weight per rod.	Price per rod.
Height 55 inches...	10.6 lbs.	$0.54
Height 47 inches...	9.5 lbs.	.49
Height 39 inches...	8.6 lbs.	.44
Height 33 inches...	7.6 lbs.	.39
Height 27 inches...	6.7 lbs.	.34
Height 21 inches...	5.7 lbs.	.29

Price 6-inch Stays.

	Weight per rod.	Price per rod.
Height 55 inches...	13.0 lbs.	$0.71
Height 47 inches...	11.7 lbs.	.63
Height 39 inches...	10.5 lbs.	.56
Height 33 inches...	9.3 lbs.	.50
Height 27 inches...	8.3 lbs.	.43
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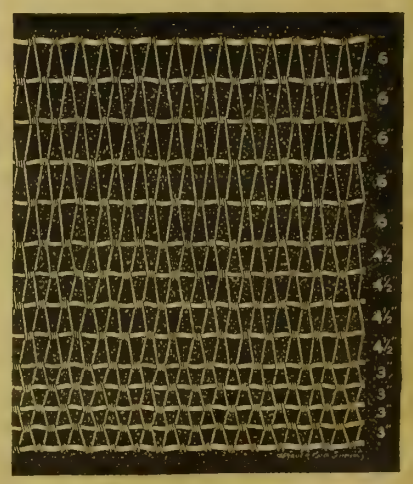
This fence will stop poultry on one side, and hogs, sheep and cattle on the other, owing to the fact that it is constructed of all large wires, woven closely together. It is not necessary to use top or bottom rail with this fence. 2½-inch mesh.



Prices are f. o. b. factory, Stockton, Cal.

	Weight per rod.	Price per rod.
Height 60 inches...	13.2 lbs.	$0.72
Height 54 inches...	12.6 lbs.	.69
Height 48 inches...	11.0 lbs.	.66
Height 36 inches...	8.7 lbs.	.51
Height 30 inches...	7.7 lbs.	.45
Height 25½ inches.	6.6 lbs.	.40

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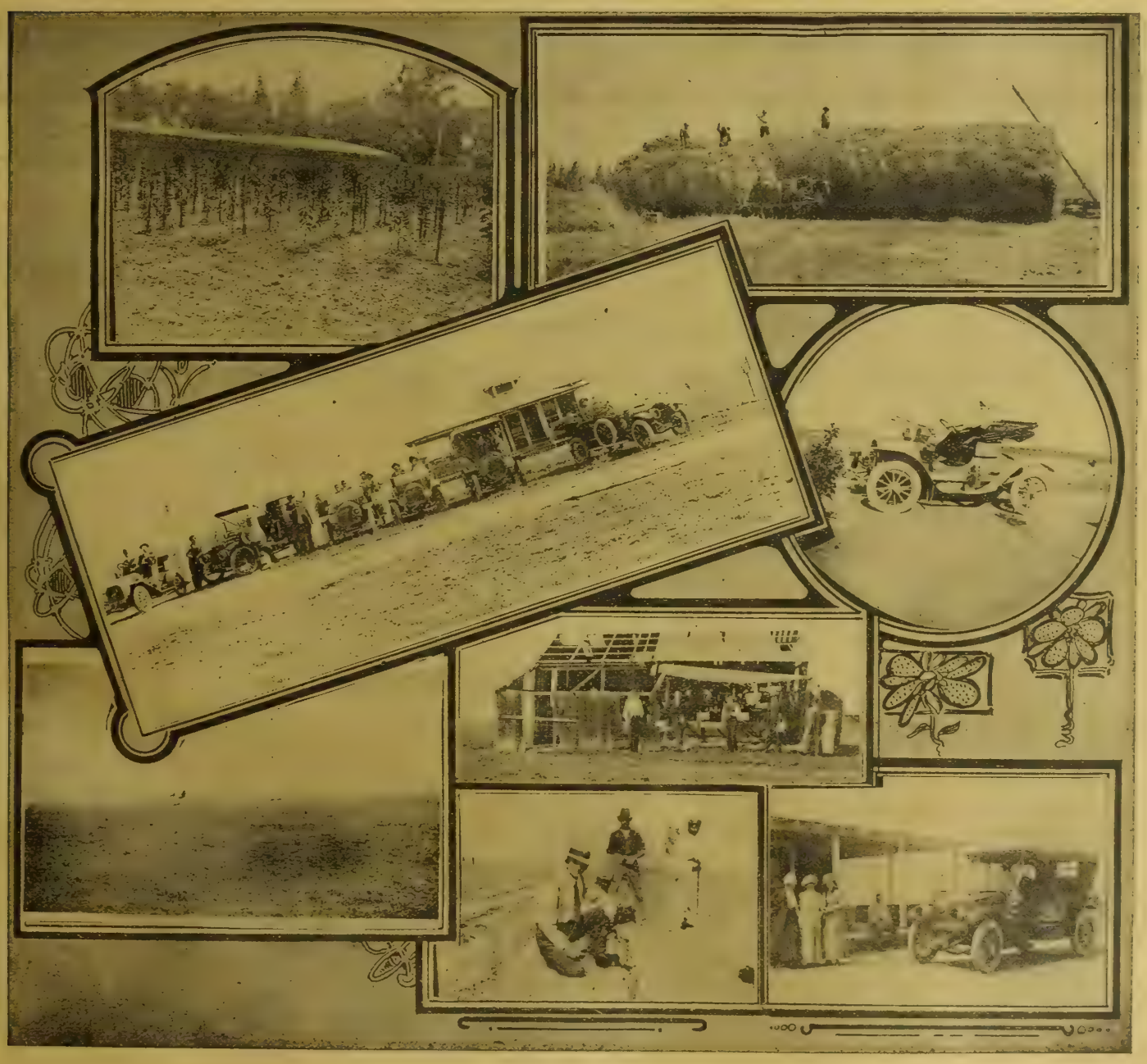
LOS ANGELES SEPTEMBER 14, 1911 SAN FRANCISCO

Ranch Scenes Near Delano, Kern County

The Sierra Vista Ranch is Located Some Six Miles East of Delano, and is in One of the Best Fruit Producing Sections of the San Joaquin Valley



—Courtesy Delano Record.

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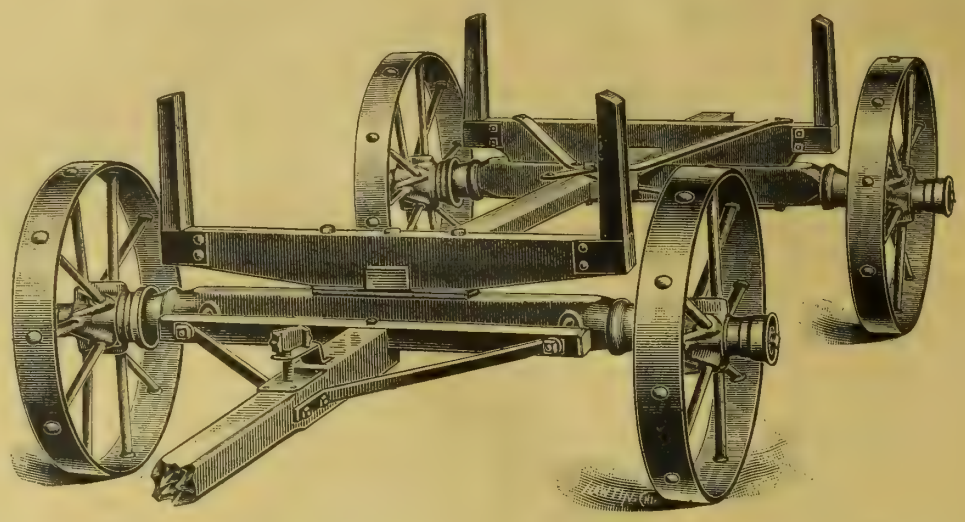

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REPORT OF THE CONDITION OF

The First National Bank of Los Angeles

AT CLOSE OF BUSINESS SEPT. 1, 1911

RESOURCES:

Loans and Discounts		$12,329,964.46
Overdrafts, secured and unsecured		35,711.95
U. S. Bonds to secure circulation		1,250.000.00
Bonds to secure U. S. Deposits		305,000.00
U. S. Bonds on hand		5,500.00
Premiums on U. S. Bonds		None
Bonds, securities, etc. (bonds only)		908,325.00
Due from National Banks (not reserve agents)	$1,331,838.01	
Due from State banks and bankers	166,091.18	
Due from approved reserve agents	1,141,362.09	
Check and other cash items	152,398.19	
Exchange for clearing house	397,532.99	
Notes of other National Banks	221,877.00	
Fractional paper currency, nickels and cents	11,710.24	
Lawful money reserve in bank, viz.:		
Specie	1,869,959.00	
Legal tender notes	496,805.00	
Cash and Sight Exchange, . .		**$5,789,573.70**
Redemption Fund with U. S. Treasurer		62,500.00
Customers' Liabilities under Letters of Credit		125,201.41
Other Real Estate owned		1,000.00
TOTAL, ...		**$20,812,776.52**

LIABILITIES:

Capital Stock Paid In		$ 1,500,000.00
Surplus Fund		300,000.00
Undivided Profits, Less Expenses and Taxes Paid		2,054,502.18
National Bank Notes Outstanding		728,450.00
Due to Other National Banks	$1,857,175.59	
Due to State Banks and Bankers	1,014,913.20	
Due to Trust and Savings Banks	1,283,636.36	
Dividends Unpaid	2,430.00	
Individual Deposits Subject to Check	11,324,480.58	
Demand Certificates of Deposit	124,170.45	
Certified Checks	31,516.97	
Cashier's Checks Outstanding	153,289.69	
U. S. Deposits	292,010.35	
Letters of Credit	139,737.41	
Total Deposits, ...		**$16,223,360.60**
Reserved for Taxes		6,463.74
TOTAL, ...		**$20,812,776.52**

STATE OF CALIFORNIA, County of Los Angeles, } ss.

I, W. T. S. Hammond, Cashier of the above-named bank, do solemnly swear that the above statement is true to the best of my knowledge and belief.

W. T. S. HAMMOND, Cashier.

Subscribed and sworn to before me this Fifth day of September,

H. B. KING, Notary Public.

Correct—Attest:

J. M. ELLIOTT, STODDARD JESS, W. C. PATTERSON, JOHN P. BURKE, H. JEVNE, F. Q. STORY, Directors.

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California Cultivator

Vol. XXXVII. No. II. LOS ANGELES: THURSDAY, SEPTEMBER 14, 1911 One Dollar the Year

California's Wild Flowers Worth Wide Planting

Address by Theodore Payne of Los Angeles Before Pacific Coast Nurserymen's Convention at San Jose

California has furnished some of the most valuable plants known to the horticultural world; many flowers and shrubs which we here pass by because they are wild are cultivated and greatly prized in Europe, and we, on the

ORTHOCARPUS PURPURASCENS

other hand, prize anything imported from foreign countries. Many of these imported plants are not adapted to our climate and conditions, and at best they need care and irrigation.

It seems a pity that we should nelgect to cultivate more of our native shrubs and flowers. For those who have large grounds and a small water supply, many native shrubs can be grown to advantage. It is not the object of this paper to attempt to enumerate all the species that should be grown, but simply to give a few of the most desirable.

Annuals.

First I will mention the annuals, as they are the ones which give the quickest results, with the least possible labor and expense; later on, I will take up the perennials, shrubs and trees. For large places, where there are trees, banks and slopes, hollows or open stretches of ground, the most marvelous effects can be produced in a few months by sowing the seed broadcast in these spots; while for small gardens a patch of native annuals would always be a source of great interest and beauty.

In sowing California wild flower seeds, follow nature as much as possible. Scatter the seeds broadcast over the ground, and let them come up after the rains commence. Many of our vacant town lots could be sown broadcast with wild flowers, producing little beauty spots for several months of the year.

Of the several species mentioned here, the California Poppy (Eschscholtzia Californica) is of course well known and generally cultivated. Though truly a perennial, it may be included here among the annuals, as it blooms in such a remarkably short time from seed.

The Nemophila insignis (Baby Blue Eyes) is well known and cultivated in Europe and the Eastern States, but is not often seen in our gardens; it is a most charming little plant of spreading habit, and in a few months from the time of sowing will cover the ground with a perfect mass of sky blue flowers. Nemophila maculata is of similar habit, but with white flowers with a deep purple blotch in each petal.

Mimulus brevipes (Yellow Monkey Flower) is perhaps one of the most showy annuals; many hillsides are yellow with this flower early in May. The flowers are large, rich canary color, and contrast well with the bright green foliage.

Clarkia elegans is a slender-branching plant with attractive flowers, pur-

MIMULUS BREVIPES

ple with white and crimson stamens.

There are three very handsome daisy-like flowers which are common on sandy soil; Layia glandulosa (White Daisy), which has large, pure white flowers with yellow centers; L. elegans (Tidy Tips), in which the petals are yellow tipped with white or cream; Coreopsis Douglasii (Yellow Daisy), a tender looking, graceful plant with finely cut thread-like leaves and yellow flowers of a peculiar brightness, more sunshiny than buttercups.

Of the lupins there are a great many species worthy of cultivation, but of the annuals, Lupinus affinis (Dwarf Blue Lupin) is perhaps the most desirable. It has very showy spikes of rich purple and blue flowers.

Three species of the Gilia which are particularly easy to grow are Gilia Achillaefolia, a slender growing plant with finely cut foliage and heads of rich blue flowers; Gilia abrotanifolia, a taller growing species, with large heads of very pale blue, almost white, flowers; Gilia tricolor, with pale lilac flowers with yellow and purple in the center. Another beautiful flower, closely allied to the Gilias, is Linanthus densiflorus or California Phlox. This also is extremely easy to grow. The plants attain a height of about one and a half to two feet, and bear large clusters of pale pink, phlox-like blossoms.

One of the most showy of our native annuals is the Blazing Star (Mentzelia Lindleyi). It has strikingly beautiful flowers of a rich golden yellow, almost as large as a poppy; this would be very effective for massing in beds.

Orthocarpus purpurascens (Owl's Clover or Pink Paint Brush) is a much branched little plant, bearing large heads of small flowers, color cream shading to rose, pink or purplish lavender. A white form is also found, though not very common.

The Phacelias are very showy flowers. P. Whitlavia (Wild Canterbury Bell) has large bell-shaped flowers, of a rich violet purple. P. Parryi has saucer-shaped flowers, deep violet, generally with five yellow spots; P. grandiflora is a taller growing species, the flowers varying in color from lavender to white, beautifully streaked and veined with violet purple.

In a shady situation Collinsia bicolor (Innocence) will do well. It is of graceful habit, with bright green foliage, flowers in clusters regularly disposed, suggesting rows; upper tips white or lilac, lower violet or rose colored.

Godetia Bottae (Farewell to Spring)

LAYIA ELEGANS

also likes the shade. The plant is of rather slender growth, with pale rose or lilac colored flowers.

Godetia grandiflora is a magnificent species, and will grow either in the shade or open sunlight. The flowers are often three inches across, of a delicate pink, blotched with rich crimson. One plant which must not be omitted here, and one of the most handsome, is the Thistle Sage (Salvia carduacea). It has thistle-like wooly foliage, and large, airy, fantastic heads of blossoms of a pale lavender shade.

Perennials.

In perennials I will first mention the Pentstemons. Of these we have several species. P. spectabilis is perhaps the most showy of all. The plants grow from four to seven feet high. The flowers are large and in great spikes, often three feet long, color is the richest combination of blue and royal purple. P. centranthifolius (Scarlet Bugler) has long spikes of rich vermilion flowers which contrast well with the handsome glaucous foliage. P. cordifolius or Scarlet Honeysuckle, as it is often called, is a tall, woody plant, usually growing among shrubs, which it uses for support, the flowers are bright orange scarlet. P. heterophyllus (Violet Beard's Tongue) is a low, bushy plant, with narrow, pale green leaves and spikes of trumpet-shaped flowers, royal purple marked with pink. These four species are all valuable for planting in dry places.

Of the native larkspurs there are two species quite worth cultivating. Delphinium cardinale (Scarlet Larkspur) a tall, branching plant with long spikes of vivid scarlet flowers, and D. Parryii (Blue Larkspur) which grows from two to three feet high and has bright blue flowers.

Mimulus cardinalis (Scarlet Monkey Flower) has pale green leaves and bright scarlet flowers with yellow throat; this grows along streams and so would require a moist place.

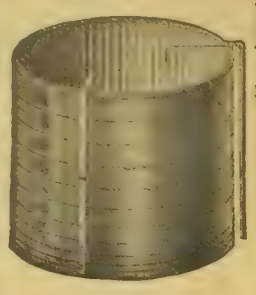
The Castillejas or paint brushes are exceedingly showy flowers. C. Martini grows generally on dry hillsides and has bright scarlet flower bracts. C. foliolosa is a little more inclined to pink, but contrasts well with the white wooly stems and leaves. C. Californica usually grows a little taller than either of the preceding, and is perhaps the most showy of all; has dark colored stems and rich scarlet flower bracts.

A flower which should be invaluable for cutting purposes is the Sea Dahlia (Coreopsis maritima) which produces large blossoms on long stems, of a rich lemon-yellow color.

The Shooting Star (Dodecatheon

(Continued on Page 224.)

PENTSTEMON SPECTABILIS



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PROCESSING CITRON.

By Special Contributor.

Referring to answer to query in which we gave method of processing citron, a subscriber who has had experience and knows has sent us the following more explicit instructions regarding the handling of this product. The statement is made in the article that the only orchard of any account is at Pedley near Riverside. We believe there is also an orchard or at least several trees near Monrovia in Los Angeles County. The writer says:

Citron grows upon trees; when ripe looking like huge overgrown lemons, many weighing over three pounds apiece when full grown. There is only one orchard of any account in California which is at Pedley Station near Riverside and is owned by the San Jacinto Land Company. This orchard is the only one from which citron is gathered for commerce in the United States.

In preparing citron for preserving it is halved, put in brine for three weeks, and said brine must be strong enough to bear the weight of an egg the entire time the citron is in it. By keeping up the proper strength of the brine, the citron can be kept in storage until necessary to use it, being kept this way many months.

You can not depulp the citron raw, as the fiber between pulp and rind is too strong. The citron is boiled in water from 45 minutes to an hour, which boiling loosens up the pulp so it can be easily removed with a spoon. The boiling also brings out the salt in the fruit and after it is dipped in two washings of cold water, all salt should have been removed.

Now the citron is ready for taking up the syrups. Since the citron has already been boiled in only water for about one hour, its texture is softened up so that syrups can soak through it evenly. A syrup can be prepared thick as honey and the citron boiled in it (do not put into the syrup more than one-half its weight of citron—into 100 pounds of syrup put only 50 pounds of citron), the water in the citron will dilute the strength of the syrup. Hence the water of the citron must pass off as steam during the cooking and at the end of one hour the syrup should be just as dense as at the start. Now the citron can be removed with its syrup and both allowed to stand for nearly a week in some vessel.

At the end of the first week the cook will find that the strength of the syrup has greatly decreased. Now the syrup should be brought to its proper strength and the citron cooked in it a second time.

Each time the citron is removed from the vessel in which it is cooked to the vessel it is to stand in, the syrup should be of proper strength. This recooking should take place as often as the syrup is found below the standard in strength. When the syrup has become constant in density, the citron can be kept stored this way at the desire of the cook as long as the syrup covers the fruit, though it is exposed to the air. Dense syrups are preservatives, but weak ones invite fermentation.

Citron should cure up in the syrup for at least four weeks. After this time the syrup should be drained from it and the fruit allowed to dry upon trays in a dry place away from the sun and the bees. It will take from five to seven days for the fruit to dry.

When it is dried, it is dipped into a crystallizing syrup made from pure cane sugar. This syrup is prepared by dissolving sugar in boiling water until you get a super saturated solution—allow the syrup to stand for five hours when a crust of sugar will be formed upon the top—remove the crust and dip the fruit well. Next lay the fruit upon clean trays and after twenty-four hours standing, a nice crystallization of sugar will cover the fruit. At last the fruit is ready for boxing for shipment.

Note: Prepare your syrups used for cooking three-fifths glucose and two-fifths cane sugar. Cooked in clear glucose the flavor is lost and fruit is too tough. Cooked in straight sugar syrup after standing awhile the sugar crystallizes in it, and transparent condition is lost and fruit becomes brittle.

Orange and lemon peel can be candied according to the same process. There is a market open for more than a million pounds of these peels.

BUDDING CITRUS TREES.

A subscriber at Pasadena has written us expressing appreciation of Mr. G. Ross Robertson's recent comments on budding and pruning citrus trees and asking for further information, especially as to whether to cover the whole "scene of operations," and how long before "uncovering," by which we presume is meant unwrapping or cutting the waxed cloth or string. Also regarding irrigation he wished to know if budding may follow immediately after, or, if not, how long an interval should elapse; further, as to budding guavas. The questions were referred to Mr. Robertson, who is at present at Berkeley, and he writes:

"I take it for granted that the question refers to citrus propagation, although its answer might apply to many other plants with which I have had no experience. Since the use of well waxed tape has a tendency to hermetically seal the buds in, it is advisable to take the wraps off as early as fifteen days. If the tape is left on too long, the bud may be drowned out, so to speak, and become the prey of saprophytic fungi similar to bread moulds. I have removed bandages as early as eight days with no injury to the bud. At the first unwrapping one is enabled to rebud any failures that show up. Care should also be taken to rebind the original buds; but in this operation the bud point or center should be left exposed to the air and light. The bud at the end of fifteen days should really be healed in all around; but on account of the tender condition of the union it needs the support of the rewrapped tape for a week or ten days longer. After the twenty-five days have elapsed the bandages may be removed and the stock be entirely cut back, provided it is spring or early summer. Buds during this and the next month should be left till March or later before cutting back the stocks.

"The only object in delaying budding after irrigation is to avoid flooding the buds with a sudden rise of sap. This is usually a minor trouble, which affects buds that are too small for propagation use. Try cutting buds from large wood; cut them long also. Two inches will not be too long where one is budding fair size stocks. By the use of comparatively large buds one may avoid to a degree the decay caused by sap overflow, simply because there is not enough sap to cover up a large bud. As a practical matter a grower would wait a day or two after irrigation, simply because it is inconvenient to wade and slush around in a freshly wetted clay loam while he carries on the operation. Final results of a large budding job will likely show far more failures from buds drying, rather than from drowning and decaying.

"Inasmuch as I have not had any experience with the guava, I cannot offer anything definite there. The presumption is, of course, that the good old budding rules will work on the guava as with other fruits."

CULTURE OF THE DELICIOUS PAW PAW.

The ripe fruit of this tree eaten for dessert with cream and sugar is not only a delicious dish but takes upon itself the responsibility of the digestion of the preceding meal. It is said that the papaya (paw paw) fruit can be eaten every day for two years without any ill effects. One or two experiments in cooking the ripe or unripe fruit with tough meat will soon convince anyone that with the aid of the paw paw the toughest meat may be made as soft and tender as you please.

The paw paw is really a large herb and hence should be grown from seed the same way as the tomato or melon. Professor P. J. Webster, of the United States Sub-Tropical Laboratory at

Miami, states that less than one per cent of a batch of Florida seedlings bear superior fruit and this accounts for the scarcity of the paw paw on the market. There are great numbers of this fruit growing wild throughout the South Florida jungles and hammocks. They are cross fertilized by numerous insects and moths. Such cross fertilization can be avoided by obtaining good varieties of paw paws from tropical localities where they come true to seed, and pollinating one or two flowers by hand, carefully tying them up in paper bags to keep insects from further pollinating them. By this method there is no doubt but what improved strains can be grown. The paw paw, like the willow and the date palm, has two kinds of trees—the barren, which bears the staminate flowers, and the fruiting tree, which has the pistillate flowers. Rather frequently the former may bear bisexual flowers at the ends of its long flower stalks, which flowers turn into rather small fruits. More rarely the pistillate tree may have some perfect flowers, provided with stamens.

All parts of the paw paw tree, except the perfectly ripe fruits, contain a milk white latex, which exudes from the slightest wound, flowing rapidly at first and then slackening, probably because it coagulates in the latex tubes. The latter soon clots and dries on the plant and so tends to seal up any wound. It has a corrosive action upon the skin, and if the raw latex from green fruits, etc., is swallowed, it may tend to cause intestinal inflammation. The raw latex has an extremely potent digestive action upon proteids. Thus, if a slice of tough meat as beef steak, which in the tropics may be cooked and eaten an hour or two after being killed, is well rubbed with the juice of the paw paw leaves or the green fruits, or even the pulp of the ripe fruit, and cooked, it becomes tender and is readily masticated. The ripe fruit, which does not contain the visible milky latex, acts in the same way on proteids.

When perfectly ripe the fruit of the paw paw is quite soft, but has lost all acridity and the milky juice has disappeared. There is no doubt whatever that this dessert fruit eaten after a good dinner greatly aids the digestive process. It also, like the fig, acts as a gentle laxative.

The paw paw requires a well drained soil and is readily killed by stagnant water about the roots. Thus it grows commonly in South Florida wild, in high hammocks and shell mounds. If grown on rather poor sandy soil, it should be enriched with plenty of humus. If only a few plants are grown, as for home consumption, the following method has been tried in a light volcanic soil in the West Indies, securing excellent results: Dig holes about ten feet apart, in well drained soil, two or three feet deep and three or four feet square, fill them with a compost of soil, farmyard manure, rotting weeds or humus of any kind, adding unleached wood ashes. Plant several paw paws in each of these holes and cover with any good mulch. Of course the young plants will need water. As soon as the first blossoms appear, cut out the staminate ones so as to leave only fruiting trees. For this purpose several plants should always be planted in a hill. A few paw paws may be planted near by on poor ground and one or two staminate trees out of those left to pollinate the others. In very dry weather the plants should be irrigated, for while they will grow in well drained soil they, at all times should be well supplied with water. If they are well grown without a check, producing large leaved healthy plants, they will in this warm climate fruit almost continuously. I have known cases of paw paws reaching an age of several years; the best fruits, however, are produced on the young trees, say one year old. Heavy crops can be grown on well-drained Everglade soil and no doubt this fruit on account of its medicinal qualities will steadily grow in demand. Should insects bother the immature fruits they can be annihilated by applications of tobacco dust.—Florida Agriculturist.

THE FEDERAL INSECTICIDE LAW.

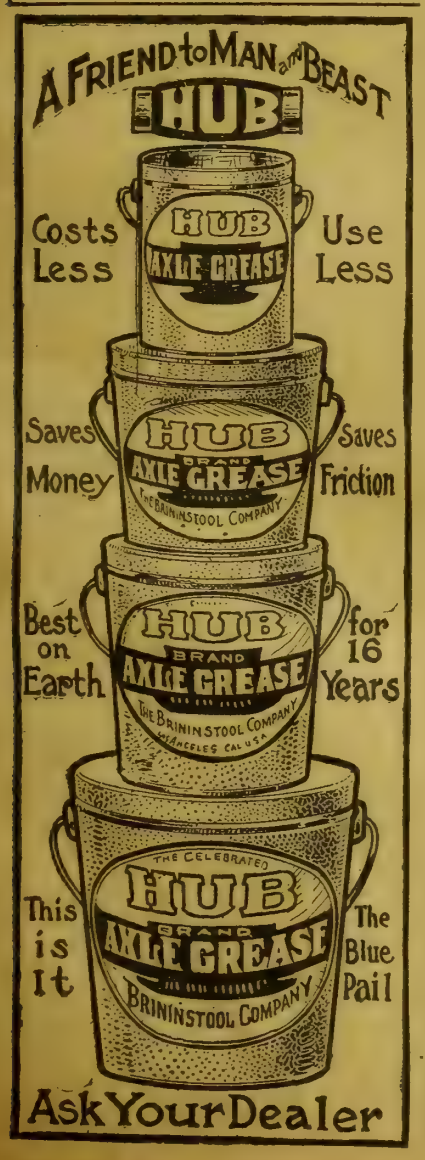
Under the provisions of Section 4 of the Insecticide Act of 1910, the Department of Agriculture is charged with the duty of examining specimens of insecticides, Paris Greens, lead arsenates and fungicides for the purpose of determining from such examination whether such articles are adulterated or misbranded within the meaning of the act, and subsequently recommending such legal action, if any, as the findings may warrant.

Sections 1 and 2 of the act are especially applicable to persons engaged in trade in the above articles in the territories and insular possessions of the United States, viz., Alaska, Arizona, Hawaii, New Mexico, Philippine Islands, and Porto Rico, in view of the fact that the manufacture or sale of any adulterated or misbranded insecticide, Paris green, lead arsenate or fungicide within the territories is punishable by fine or imprisonment. An insecticide or fungicide is any substance or mixture of substances intended to be used for preventing, destroying, repelling or mitigating any insects or fungi in any environment whatsoever. Inquiries on the part of those interested may be addressed to the Insecticide and Fungicide Board, Department of Agriculture, Washington, D. C., to whom application may be made for copies of the law and rules and regulations for its enforcement.

The Insecticide and Fungicide Board, composed of four members selected from the scientific staffs of the Bureau of Animal Industry, the Bureau of Plant Industry, the Bureau of Entomology, and the Bureau of Chemistry, was organized by the Secretary of Agriculture to assist him in enforcing the provisions of the Insecticide Act of 1910 as provided by law, and has just issued decision No. 1, relating to the subject of Insect Powders.

Bulletin 214 of the California Agricultural Experiment Station, written by Prof. H. J. Quayle, treats of citrus fruit insects. In fact, its title is "Citrus Fruit Insects." It starts in with the old and familiar pest, black scale, which has been with us for ages, touches other pests affecting citrus trees and ends with a few pages of fumigation, tables for dosage, measurement of tents, season for fumigation, etc. It is well worth the asking and citrus growers should request it at once.

Commissioner Ehrhorn of the Hawaiian Islands made an address before the San Jose Grange touching upon the menace of the Mediterranean fruit fly.



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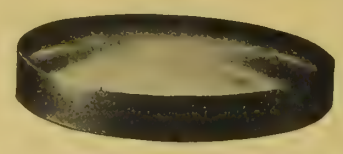

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The Raisin Crop is Short

Mr. Geo. Robertson, State Statistician, Estimates a Shortage of 48,000 Tons in the World's Output This Season

The California raisin crop, which at one time promised to be a record one, was severely damaged by a late frost and from a large number of reports received from all the raisin-producing counties in the state, it appears certain that the crop will be less than in any year since 1906.

The season is late, so too early picking before the grapes are mature is likely to take place in the endeavor to avoid early rains. The second crop is generally good and may be picked and dried with the first crop if the weather is favorable, and the new acreage planted a few years ago, now increasing in bearing, will help to maintain the output. Kings county reports better conditions than some other counties. San Diego county is very short and one large vineyard in Fresno county reports Thompsons as being a good crop, but both Fresno and Madera counties report many vineyards spotted.

For the first time in the last five years the production will fall below 100,000,000 pounds. In 1894 it first exceeded that amount with 103,000,000 pounds. In 1903 the crop was 120,000,000 pounds, and the last five years the totals have been as follows:

California Raisin Crop.

Year	Pounds
1906	95,000,000
1907	140,000,000
1908	130,000,000
1909	140,000,000
1910	112,000,000
1911 estimated	96,000,000

Seedless varieties are especially short. In some cases Thompsons and Sultanas are stated to be from 50 to 65 per cent below the average. Malagas are also reported to be only about half a crop as regards raisins, but a large quantity is now shipped green as table grapes. There are exceptions and in Yolo County the crop of Seedless is reported good, but the quantity produced has fallen off on the last year or two, owing to the quantity shipped green as table grapes.

1891 the California raisin crop first exceeded that of Spain, and since then has kept on increasing, until it has more than doubled the quantity produced by what for centuries has been the leading raisin producing country of the world.

Spanish Raisin Crop.

Year	Long Tons
1907	27,000
1908	25,000
1909	30,000
1910	18,000
1911 (estimated)	22,000

The Spanish crop early in July promised to be at least 25,000 tons, but damp weather caused mildew and in July and August great heat damaged the crop, the latest advices from Denia stating that the crop will be 20,000 to 22,000 tons.

Prices in 1910.

The following were the prices realized last year for 22-pound boxes, c. i. f. American and British ports:

	First half of Sept.	First half of Nov.
Finest clusters	$4.13	$3.89
Medium clusters	3.16	2.67
Ordinary clusters	1.88	1.70
Finest loose	1.70	1.65
Medium loose	1.57	1.31
Ordinary loose	1.17	1.05

Smyrna Sultanas.

Year	Long Tons
1907	47,000
1908	45,000
1909	50,000
1910	15,000
1911 (estimated)	30,000

The Smyrna vineyards which last year suffered severely from mildew will not produce a full crop this year, but, provided the weather conditions continue to be favorable the crop will be a moderate one.

With the exception of last year, when most European crops were more or less ruined by unseasonable weather, both the Spanish raisin crop and the Smyrna Sultanas are considerably below the average.

Australian Raisins.

Both raisins and currants have been grown in Victoria and South Australia for many years, and the production is increasing, but they are mostly consumed at home, and none have been imported into the United States for several years.

Greek Currants.

The imports of currants into this country are considerable, and the quantity has not varied greatly during the last fifteen years. The crop is always a very large one, as the following summary shows:

Year	Long Tons
1907	156,000
1908	185,000
1909	185,000
1910	123,000
1911 (estimated)	140,000

Imports and Exports.

For fiscal year ending June 30, the custom returns continue to be highly satisfactory, the imports of foreign raisins showing a large and steady decrease in recent years, while the export of California raisins has greatly increased during the same period.

Year	Foreign Raisins and Smyrna Sultanas Imported Pounds	California Raisins Exported Pounds
1906	12,414,855	4,528,502
1907	3,967,101	9,128,827
1908	9,132,353	5,684,541
1909	5,794,220	7,880,161
1910	5,042,683	8,526,114
1911	2,479,220	18,659,812

The quantity of Sultanas imported is not so great as is generally supposed, the totals being as follows:

Year	Pounds
1906	7,372,568
1907	1,057,519
1908	1,638,028
1909	2,760,386
1910	2,227,884
1911	Not available

The imports of Greek currants during the same period were from 32,000,000 to 38,000,000 pounds.

The great falling off in the imports of foreign raisins is shown by the following figures. In 1894 the quantity amounted to 56,676,638 pounds. Ten years later it had fallen to 27,543,563 pounds, and last year only amounted to 2,479,220 pounds.

The exports of California raisins have increased in nine years from 2,323,276 pounds to 18,659,812 pounds.

The best foreign customers for California raisins and the pounds sold annually are:

	1906	1907	1908	1909	1910
Canada	2,697,797	6,138,010	3,663,870	5,736,290	6,086,327
Australia and Tasmania	978,860	92,427	12,275	5,400	5,600
New Zealand		1,111,555	1,216,792	1,133,495	1,323,520
Mexico	19,286	25,845	22,141	11,296	16,361
Japan	9,378	10,258	10,448	7,319	7,928
United Kingdom	2,843	8,940	3,548	8,018	2,150
Philippine Islands	2,682	589	429	1,639	6,909

Panama takes about 3000 pounds and China about 2000 pounds.

Summary.

The raisin and currant crops both of this country and in Europe were greatly below average last year, in fact in most cases the lowest on record, therefore they cannot be taken for comparison as approaching a normal crop. Compared with the year 1909, the estimated total crop of raisins this year shows a deficiency of 48,000 tons, or, including Greek currants, the shortage amounts to about 93,000 tons, as follows:

Raisins.

	1909 Tons	1911 Tons
California crop	70,000	48,000
Spanish crop	28,000	22,000
Smyrna Sultanas	50,000	30,000
Totals	148,000	100,000

Raisins and Currants.

	1909 Tons	1911 Tons
California crop	70,000	48,000
Spanish crop	28,000	22,000
Smyrna Sultanas	50,000	30,000
Greek currants	185,000	140,000
Totals	333,000	240,000

These are provisional estimates, but the final results are likely to be more or less in accordance with the above figures. Weather conditions both here and in Europe during the next six or seven weeks will determine the actual size and condition of the crop.

INVESTIGATION OF POTASH DEPOSITS.

An investigation into possible sources of potash salts in the United States is being made this year by the United States Geological Survey under an appropriation by congress of $20,000 for the current year.

One of the possible sources from which potash may be derived is in association with saline deposits left by the drying up of large bodies of salty waters, such as are known to have existed at one time in many of the now desert areas of southwest Oregon, Nevada, southeast California, in Utah, and elsewhere. It is hoped that by testing these saline deposits some may be found sufficiently rich in potash to have a commercial value, and that there may even be located some large and important deposits.

Free Analyses of Salts.

As a part of this work the Survey will soon fit up a temporary laboratory at Fallon, Nev., for the purpose of testing samples of salines from the Great Basin or desert areas.

Samples of such alkaline salts will be tested at this laboratory free of charge if a definite statement of the locality from which they were obtained be sent with the samples. The location should be given by section, township and range, if possible, otherwise by distance and direction from the nearest postoffice or settlement. Samples should be addressed to Hoyt S. Gale, United States Geological Survey, Fallon, Nev. Upon receipt of a request small sample sacks for sending the material by mail will be forwarded from the above address.

If so requested at the time that a sample is submitted for test, the accompanying information concerning the locality of the deposit will be treated as confidential; and the evidence thus obtained is not to be used for the purpose of making land withdrawals.

Bulletin Number One of the California state commission of horticulture has just been issued. It is the first publication under an appropriation made by the recent state legislature providing the sum of $10,000 for the two fiscal years beginning July 11th to be used in publishing reports, bulletins, circulars, and general information upon matters relating to fruit and kindred industries of the state. This is double the previous appropriation, and the state commissioner expresses the hope that this will enable him to give efficient aid to the fruit industry.

This first bulletin is entirely devoted to the administration of the quarantine division of the state commission, and gives the laws relating thereto. It also gives a list of the state quarantine guardians and their duties and the text of various quarantine orders. At the close of the bulletin the commissioner invites suggestions from any connected with the fruit industry as to scope and contents of other bulletins to be published.

Two gentlemen from Russia are now in California securing information as to fruit marketing, refrigeration, and transportation matters. They are Messrs. Oscar Dreier, Traffic Manager of the Riasan-Ooralsk Railroad, and C. Tihotsky, Mem. Russian Ref. Com. Deput-Russian Pr. Railroad. These gentlemen were sent to the United States by the Russian railroads to investigate transportation of perishable products by railways, and other conditions concerning fruit and other food industries.

As to fruit growing conditions in Russia, Mr. Tihotsky informed us that the apple is by long odds the leader and is the staple fruit. This is practically the only fruit produced in the north central portion of the country. North of a line drawn through St. Petersburg there are no fruits and but little of value in agricultural products. The limited population of the extreme North subsists on fish secured from the White Sea. The principal fruit growing section of Russia is about the Black Sea. The province of Kief is one of the largest apple producers and its principal apple is the Gravenstein brought to such perfection in Sonoma County, this state. These apples are shipped as far north as St. Petersburg and over a great portion of southern Russia.

The cantaloupe section of Russia is about the northern shores of the Black Sea. North and West of Odessa especially great quantities of the fruit are grown, and these are also shipped as far north as St. Petersburg.

Messrs. Dreier and Tihotsky will leave the southern part of the state for the North within a few days and will investigate as to fruit packing and shipping in producing sections and at Sacramento.

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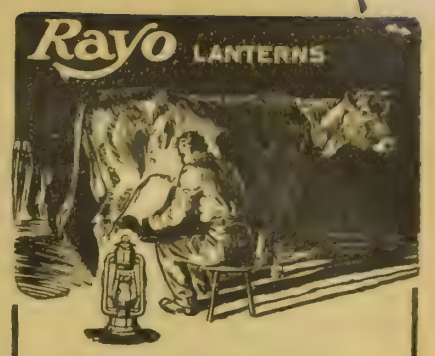

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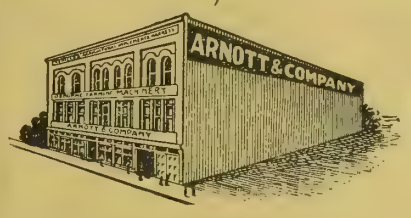

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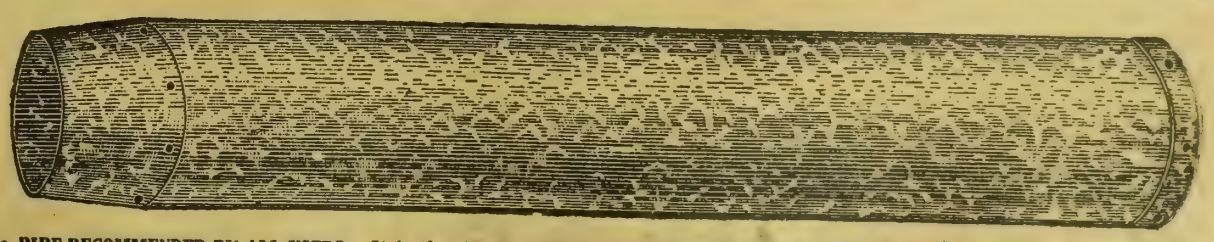

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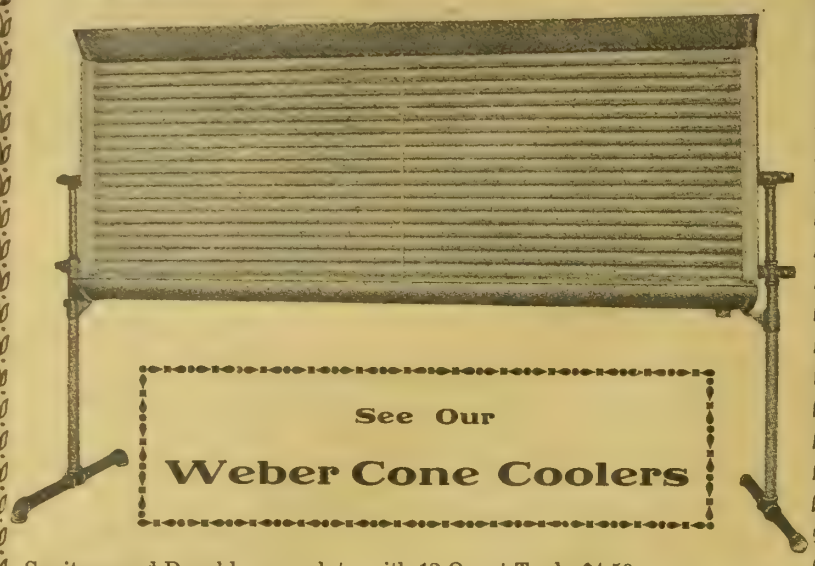

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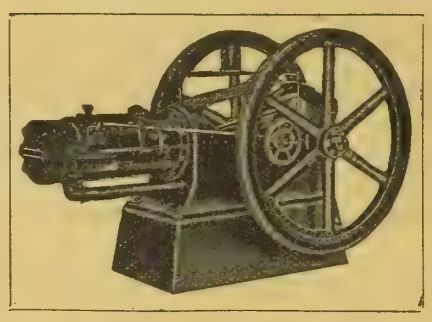

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HORSES.

By Mrs. M. E. Sherman.

Horses are being replaced in many lines of city work by the improved motor trucks. The San Francisco hills are no longer a heart-aching sight for a few less horses are struggling up them with heavy loads. A motor driven truck stalled on a hill only stirs the passerby to a smile of amusement at its predicament. The driver cannot work it into a frenzy of terror by shouting and laying on the whip, he is therefore usually silent in his disgust as he has no one to blame but himself for the failure. In the work of the vineyard and orchard the horse is still supreme. The flamboyant wording of the picturesque advertisement of automobile dealers frightened many farmers out of horse raising too soon, for the "passing of the horse" has not come nearly as soon as predicted. The profits of horse raising in California have never been greater than during the past five years. The prices of sound work horses is well sustained. In the heavy grade draft horses the demand has been strong at good prices.

Small Farms.

Irrigation has brought about the subdivision of the great grain ranch into small holdings. When a section of land is divided into small fruit farms, the population, human and equine, increases. More horses are required and more people are supported than on the grain farms. Under my direct observation, twenty-five years ago, was a great grain farm of forty thousand acres. One thousand fine mules put in the grain, drew the combined harvesters and hauled the sacked grain to market. This acreage is now in small holdings of twenty to a hundred acres and planted to vineyards and orchards with alfalfa patches for the family cows. At a farmers institute in the neighboring town it was asked of several men between sessions, as to the probable number of horses kept by each fruitgrower. The usual number seemed to be two work animals and one lighter horse for driving and working. Three to each twenty acres would make fifteen to each hundred acres and six thousand to the forty thousand acres of former grain farm or an increase of five thousand in the horse population. This same thing has gone on all over California and has made such a demand that the few breeders having animals on hand have profited by it largely.

Larger Horses.

The farmers at the different institutes are now talking of the horse that weighs from fifteen to seventeen hundred pounds of an active type as more economical as a worker than the former lighter horse of a thousand pounds. The tendency toward adoption of riding tools requiring three of these light horses or two of the heavier ones to handle them has increased the demand for the lighter type of draft horses. The small autorunabouts are cheap and reliable for the farmer to make his trips to town if a large machine is not desired. The ranch work horses are not in use as buggy horses on request. It is certainly easier for the horse to do only one form of work. Yet we never had as good driving horses before in the hands of the general farmers. The demand for geldings for the army a few years ago, left the mares on the farms as work animals. When a man has a fine mare, even if his farm is limited, he is tempted to find a place for one or more of her colts. The love that a faithful mare inspires makes one anxious to have her colts continue in the family. I find myself saying "Yes, Bellwood is Pet's filly, and Jean is Jeanette's filly and Jeannette was old Lady Jaynes'." They have a personality that other horses purchased would not possess. This is one of the joys of living in the country and having friends among the animals. The trotting mare of good breeding but not in the two-twenty class makes a good brood mare for producing either large sized carriage or express horses or saddlers. The mares should be selected carefully, using the smooth ones with good heads and necks, having round rumps and barrels, with long pastern joints for breeding, for driving and saddle animals. The rougher mares are good dams for draft grades. The things most to avoid in selecting a brood mare are spade feet, cat hams and any form of bone disease, as splavin, thoroughpin and like troubles, which may be transmitted to the colts.

Morgans.

The United States government is buying Morgans to again build up a strong stud of this strain of horses. The farmers crossed many of these good Morgan mares with ill-shaped horses of trotting strains of any sort of breeding. The craze for speed! speed! speed! nearly lost the Morgans, the best type of light horse we have ever had in this country. The automobile we often think brought about the love of going, but it only intensified the American desire to get there at once. The Morgans are a hill race of horses and do wonders. It is not uncommon in the hill country to drive fifty miles a day in a heavy buggy with a single animal day after day. My uncle had an old mare bought in New Hampshire of a celebrated Morgan strain. This old mare had two daughters, one a pure Morgan and the other by a Hambletonian sire. It was twelve miles to Westchester and the Hambleton-Morgan mare used to take the spring wagon with uncle and me around the curves, and over the stones and "thank you marms" in a short hour and back again with the load of farm supplies. Once the seat tipped and we rolled out of the back of the wagon. The Hambleton went on straight as an arrow home without spilling anything else, to the hitching post at the side door of the house. The Morgan mare was not as speedy as her sister, but was gentler and of more loving disposition. She had great endurance and was used by the women of the family on the long trips across the country of thirty or more miles to spend the day with Friend Supplee, or Friend Darlington, or some other good old Quaker family. The family carry-all often had four grown people with children in the cracks to its full capacity, the long miles were reeled off going and coming with ease by this little nine hundred pound mare with legs of steel and back of iron. Year after year of this endurance test these mares stood until twenty years later when I last saw them, they had the sunken eyes of age, and yet not a blemish on the legs or any other signs of age. The Hambletonian mare was totally deaf from lightning that had run down the barn deflected along the iron holding rod of the manger during a terrible thunder storm.

The offspring of the Hambletonian sire Electioneer gave many large-sized horses of good red bay to this state. The farmers tried to raise something fast but got instead some of the best carriage horses and work animals. These horses weigh from twelve hundred to sixteen hundred and many of them show Roman noses and pigeon toes as a race mark. Many of these excellent horses have great strength and vigor with good style and flat-boned legs but are not sweet-tempered as a rule. Many of them cannot be handled by poor horsemen, as they try by snorting to bluff out a timid man. Petting they are indifferent to, but if one respects their great ability to go and promptly calls their bluffs, they make fine carriage horses. They cannot be surpassed for level-headedness on the road, taking care of themselves and the family in their own sour way. They remind me of some people that are said "to do the kindest acts in the unkindest

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way possible." Now please do not say that I think all Hambletonian horses are like this, but the thirty-four I have owned were all sullen as they grew old. I have one today that I have had almost constantly in use for twelve years that will not accept anything from my hand, but looks at me with a snort. He is the only one that is that bad, the others merely chill my budding affection for them with a cold glance.—M. E. Sherman.

ROYALTY AND NOBILITY TO VISIT CHICAGO.

Blue Blooded Guernseys for the National Dairy Show.

An extremely interesting thing is to take place at the National Dairy Show in Chicago this year. It is no more nor less than a contest between the breeders of the United States and the cattle experts of England as to which country has the best judges of dairy cattle. This international rivalry has never been settled. Year after year American and English fanciers visit the Guernsey and Jersey Islands and return with their importations. These animals easily win in their classes in each respective country, but have never competed internationally, so it has always been a question whether Englishmen or Americans are the best judges in the selection of prize winners.

About a month ago an intimation reached Chicago from a few representative and, incidentally, titled breeders of England that they were ready to try conclusions with their American brothers; it being suggested that the matter be settled in the ring of the National Dairy Show in Chicago next October. This was promptly agreed to by the officials of the exposition, who realized that this would be the greatest case tried in their "court of last appeal" for the world's leading breeders.

News of this international competition has spread among the American breeders, and there is the same determination to win as is in evidence here when we build our cup defenders for the international yacht races.

SAVING BY CO-OPERATION.

The saving effected by the Litchfield co-operative livestock association in the marketing of hogs has averaged about 50 cents per hundred weight, as compared with sales effected outside the association. If all the livestock of the state were sold on a similar basis, it would mean a saving to the producers of about $1,500,000 annually. But this figure refers to the product of livestock under present conditions only. The business of stock raising is still in its infancy in Minnesota. Next to dairying it is destined to be, probably, the largest agricultural interest in our state. Destiny so writes in the fact that the grasses and feed-crops, which are the basis of all successful animal husbandry, here find their natural home, their richest development. Therefore, efficient organization among stock raisers means the saving to them not merely of $1,500,000 annually, which now goes into the pockets of middlemen, but of many times that amount when, as a stock growing region, Minnesota shall have "come to her own."—C. R. B., University Farm, Minnesota.

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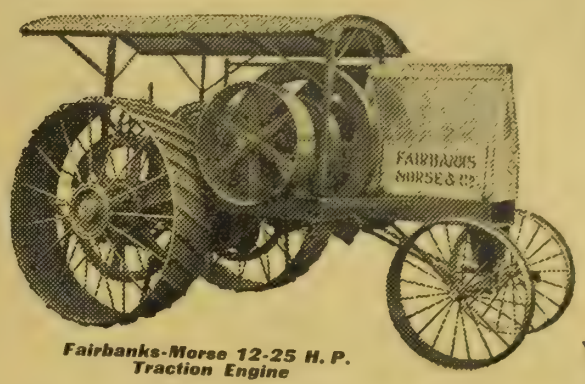

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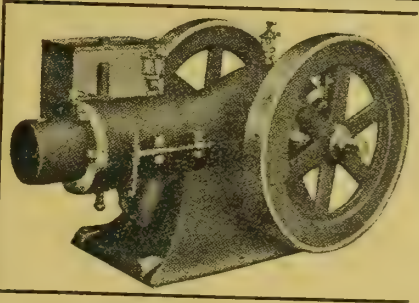

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You can sow this package of choice seeds in out-of-the-way corners of the garden, in odd beds around young trees or on embankments and with little cultivation you will have a mass of gorgeous and continuous blooms, sweetly fragrant, all through summer, till killed by frost.

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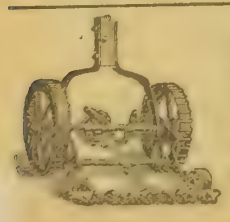

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CALIFORNIA WILD FLOWERS.

(Continued from Page 217.)

Clevelandi) is a very pretty little plant with fragrant flowers in shape like the cyclamen and varying in color from delicate lilac to pure white. The petals are ringed at the base with pale yellow and the beak of the flower is violet purple. The plants are easily grown and transplant well, but require plenty of water.

Lobelia splendens is found in wet places and along streams in the upper portion of the chaparral belt of our mountains, grows two to four feet high and produces long spikes of cardinal red flowers. The Columbine (Aquilegia truncata) is also found along streams. The flowers are deep scarlet, tipped with yellow; plants grow two to three feet high and have slender, graceful stems with beautifully escalloped leaves. The two foregoing species would both require plenty of water, but are certainly worthy of cultivation.

The Matilija Poppy (Romneya Coulteri) is of course cultivated to some extent, but should be more generally bush grows from four to eight feet high, has graceful willow-like foliage and bright yellow flowers, two to three inches in diameter, in shape and color almost like the Hunnemannia fumariaefolia of our gardens. It blooms nearly all the year round, but it is at its best in early spring. I found a magnificent specimen in the San Fernando wash. The bush was about eight feet high, and had over five hundred blossoms on it.

Of the Ceanothus (California Lilac) there are many species worthy of cultivation in our gardens, but will simply mention one of the most desirable here, Ceanothus divaricatus, which has large clusters of pale blue fragrant flowers. In early spring when in full bloom this shrub presents a most charming appearance on many of our hillsides, with its long sprays of delicate pale blue flowers.

The Fremontia Californica, (California Slippery Elm) found by General Fremont when crossing the Sierra and named in his honor, belongs to the Sterculia family; grows from four to fifteen feet high, and reaches its

VIOLA PEDUNCULATA

appreciated. It has often been termed the Queen of California flowers, and is truly a majestic plant. The blossoms are often six or seven inches in diameter, pure glistening white with yellow centers.

One of the most handsome of our native flowers is the Wild Wallflower (Erysimum asperum) an erect growing plant, two to four feet high, producing long spikes of large orange-colored flowers.

A valuable plant for dry banks is the California Fuchsia (Zauschneria Californica). It has woody stems and gray green leaves covered with soft wool. The flowers are trumpet-shaped and of a vivid scarlet color. This plant grows on dry banks, and is remarkable for its very free flowering qualities.

Solanum Xanti (Violet Nightshade) also grows in dry sandy situations. The plants are of shrubby growth with rich green foliage and clusters of violet blue flowers. Solanum Wallacei is a handsome species which grows on Catalina Island. It has rather heavy, wooly foliage, and deep violet flowers.

Another shrubby plant is the Venegasia carpesioides which forms quite a bush, often six or seven feet high, with an abundance of large, glossy, bright green leaves and flowers in shape something like a Marguerite, but of a pale lemon yellow color.

Shrubs.

One of the most beautiful of all of our native flowering shrubs is the Dendromecon rigidum, or Yellow Tree Poppy. It is very hard to propagate, however, and for this reason is not likely to be generally cultivated. The greatest perfection on the desert side of the mountains. It flowers in early summer and the bushes are simply a mass of golden yellow flowers two to three inches across. No more glorious sight can be imagined than a mass of these shrubs in full bloom. It has been cultivated in Europe and to some extent in California, but is not generally known.

A most exquisite little shrub found in the canyons bordering on the Colorado desert is the Dalea spinosa. The flowers which appear about May are pea-shaped, and produced in great profusion. The color is the richest shade of dark blue I have ever seen in any flower.

Almost anywhere in our foothills can be found the Sticky Monkey Flower (Mimulus glutinosus) or Diplacus longiflorus as it is termed by some botanists. This shrub grows from two to five feet high, the flowers remind one of an azalea, and are usually of a deep, rich orange color, though there is a deep crimson form which grows in the mountains near Chatsworth Park, and also many intermediate types. I have also found plants with pale cream colored flowers. This shrub will grow without any irrigation, but the natural rainfall, and flowers for the greater part of the season, but especially in spring when the plants are simply a mass of bloom.

Another shrub equally worthy of cultivation is the Encelia Californica, this has yellow flowers something like a single sunflower, it blooms abundantly, the flowers are on long stiff stems, and last well when cut, and will grow in any dry place.

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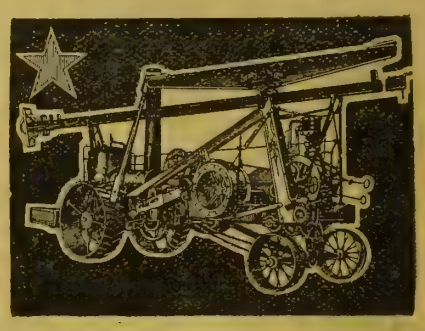

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Another cotton seed oil mill is in contemplation for the Imperial Valley.

I know of two ladies in Hollywood who have a number of native shrubs in their garden, among others one fine specimen of the common Greasewood (Adenostoma fasiculatum). When in flower many people have stopped to admire it, and have asked the name of

DELPHINIUM CARDINALE

it, and yet within less than half a mile there are hundreds of acres covered with this shrub. In May many of our hillsides are white with the blossoms of this plant. It flowers in large feathery panicles, and reminds one of the blossoms of the cultivated Spiraea Japonica.

A common evergreen shrub in our foothills is the Fuschia flowered gooseberry (Ribes speciosum) and is well worth cultivating in our gardens. It transplants easily and can be propagated by cuttings, grows four to eight feet high and is of spreading habit. The stems are furnished with triple thorns and also thickly clothed with rich red hairs; leaves three lobed, rich green; flowers about an inch long, rich cardinal red, hanging in long sprays much like a fuchsia.

Ribes tenuiflorum is a beautiful yellow-flowering currant. It forms large bushes which are covered in early

CASTILLEJA MARTINI

spring with immense quantities of light yellow flowers. A beautiful shrub for very dry places is the Romero or Wooly Blue-curls, (Trichostema lanatum). It has flowers in spikes often a foot or more long, of a rich blue color.

Pentstemon antirrhinoides also grows in dry places. It is a handsome bush species with narrow leaves and numbers of very large, canary yellow flowers. Another very pretty flowering shrub is Berberis Nevini. It has very prickly foliage, and long sprays of rich yellow flowers.

The Yellow Tree Lupine, (Lupinus arboreus) is found on sandy mesas. It grows from four to ten feet high, has rather silvery foliage and large canary-yellow, fragrant flowers. It would be especially valuable for beach gardens, as it will grow in pure sand. Indeed it has been said that this and another species of Lupine were found most valuable near San Francisco for anchoring the shifting sand dunes. The seed was sown with barley which growing more rapidly, protected the plants when young. In one year the lupines had covered the sands with a thick growth two to three feet high, enough to prevent them shifting during heavy storms and to allow the planting of other trees. In this way was made possible the laying out of the beautiful Golden Gate Park of San Francisco.

The California Holly or Christmas Berry (Heteromeles arbutifolia) is of course well known to all and greatly admired. It is a beautiful shrub and well worth cultivating, both for its handsome foliage and attractive berries.

Another shrub with showy berries is Rhamnus crocea, a low, thick, much branched shrub with small leaves and insignificant flowers, but producing immense quantities of rich scarlet berries.

The Cascara Sagrada or Wild Coffee (Rhamus Californica) is well known and may be mentioned here as worthy of a place in our garden.

Two evergreen shrubs especially desirable for their handsome foliage are Rhus laurina (Sumach) which grows in compact form, has smooth green foliage and clusters of small white flowers, and Rhus ovata (Lem-

BRODIAEA COCCINEA

onade-and-sugar-tree) as it has been called on account of its acid berries which are coated with a sweet, sticky substance. The foliage is large, rich bright green and leathery. This is one of the most handsome shrubs imaginable and should be very extensively grown. Both of these species grow in very dry places and would be particularly valuable for dry banks and places where water is scarce.

Juniperus Californicus is a dwarf spreading species found in some of our dry sandy washes and could be used to advantage in many gardens.

A splendid shrub either for single specimens or for hedges is the Wild Cherry (Prunus illicifolia). It has pretty, glossy, holly-like foliage and small white flowers. Last Christmas large quantities of the foliage of this shrub were shipped into San Francisco and Los Angeles and used for decorating, much of it being made up into wreaths and sold by the florists. It apparently found ready market, but few people, even those who were handling it, knew what it was.

Trees.

Perhaps the most familiar of our native trees is the Live Oak. Still for beauty it has few if any rivals. Quercus agrifolia is the most common species, and is known by nearly everyone, but there are others equally worthy of cultivation.

The Golden Cup or Canyon Oak (Quercus chrysolepsis) is plentiful in the canyons of our mountains above 2500 feet elevation. It forms a magnificent tree of large size; the foliage is smaller than the common live oak and of a slightly different shade of green, and the acorns and cups are of

(Continued on Page 237.)

Pansies

MORSE'S
Superb Mixture of Giant Pansies
Packet of 500 Seeds, 50 cents

These are the very finest of Giant Pansies in all shades and with rare markings—the very best Pansy seed anywhere.

Giant Flowered Collection—one package of 9 sorts from our Prize Strain Mixture—mailed $1.35.

For other varieties send for our Fall Catalogue.

Pansies should be planted in a box and transplanted twice in order to get the finest flowers; use manure. Sow your pansies in the Fall—now is the best time. Golden Gate Park have already planted theirs.

For best Pansy results
Morse's Superb Mixture
50 cents per Package

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New crop Vetch Seed just arrived from Europe. Prices on application.

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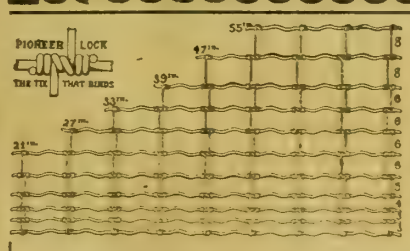

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SUBDIVIDED.

Almost every week brings to notice some new subdivision of lands in the Sacramento and San Joaquin Valleys. These valleys, especially the northern one, have been cursed with large ranch owners who insisted upon holding great tracts of land either as stock ranges or for hay or grain raising. Instead of being farmed on the intensive plan, they were farmed on the most extensive one, and sometimes with material profit to the owners. But such great tracts have kept back the growth and withheld opportunities from the small landowner. Some of these great ranches were in the most fertile sections and their subdivision will make place for many thriving communities and greatly increase the wealth of the state.

INCREASE OF SUGAR OUTPUT.

California's sugar production will this year break all records. In the first place the quantity will be in excess of any previous year, and again, the sugar content of the beets is higher. One feature of the increase in value has been the drying of pulp which has heretofore been placed in silos or sold fresh to stock feeders. This will enable longer transportation and the saving of a most valuable by-product of the sugar factory.

The increase is peculiarly gratifying because the total sugar output of the United States will be much less than heretofore. Unfortunately under existing conditions the increase in price within the last few weeks will not be realized by the beet producers. It may. however, give an advantage to the farmers in enabling them to secure more favorable contracts for next year's output.

VALUABLE REPORT.

It may be somewhat late, but we must refer to a county horticultural commissioner's report giving to his constituents accounting for the past year's efforts. It is that of Mr. E. O. Essig, of Ventura County, and is the most complete county report we have ever seen. It is a pamphlet of 64 pages, fully illustrated, and records the work of the year July 1, 1910 to June 30, 1911. This is the second annual report and was first given to the producers of the county at an annual fruit growers meeting held at Santa Paula, June 29th. The best part of Mr. Essig's report is that it is not merely an enthusiastic presentation of possible work by the commission, but a clear statement of work done, and better, information as to aiding in keeping the various insect and fungoid pests from the orchards of Ventura County.

INCREASING PRODUCTION.

The gathering of cotton in the Imperial Valley has reached the stage where it is evident the average production per acre will be materially in excess of any preceding year. It is too early to give exact figures, but the fact that there will be some increase is gratifying. The increase will not reach the amount promised by some cotton enthusiasts early in the game, but there has been such a wide difference between actual production and enthusiasts' promises that it will afford opportunity for improved cultural methods to be brought into use for some time to come, but it is no wonder that production has not yet come up to predictions, for it must be considered that California is young in cotton producing and that conditions here are as absolutely different from conditions in the South as daylight is from dark.

With the weeding out of the careless growers and use of only those methods which have brought best results, will come an increased production year by year which, we believe, will make California a reputation as a cotton producer. In this achievement long staple cotton will play a leading part.

A BIG BUSINESS.

Farmers often look at masterful handling of large business ventures and sometimes feel restive under the small operations which seem necessary in their chosen line, but we may be permitted to call attention to the fact that in the aggregate they are responsible for the world's greatest industry. Farm lands in the United States, exclusive of the buildings on them, were valued in 1900 at $13,058,008,000. This immense valuation was more than doubled during the decade ending 1910, or to be exact, these lands had increased in valuation to $28,386,770,000. This was an increase of 117.4 per cent. The increase in valuation was not equalled by the increase in acreage of farm lands, for that was only 4.2 per cent, consequently this great increase in aggregate value was almost entirely upon the lands already under cultivation in 1900. This increase brought down to the acre was from $15.57 in 1900 to $32.49 in 1910. Probably this increase was caused more by the general advancement of the prices of farm products. Another factor is that the farmers are prone to figure their interest returns at a lower rate than formerly, that is. at a lower rate upon investment in the farms than was considered acceptable a few years ago. Another cause of increase is the draining and full reclamation of swamp and other lands which were partially tilled before and have been brought under intensive cultivation by tiling, diking and other methods.

STATE APPLE SHOW.

The Watsonville boosters are making a far greater effort for a big show than last year. At that time "Watsonville Apple Annual" was the slogan. Now the idea is to have a more general representation amongst exhibitors. A representative of the association is now in the southern part of the state endeavoring to line up every section which can produce apples and secure an exhibit which shall be truly representative of the entire state. Already eleven entries have been made in the full carload class and it is expected to exceed last year's 15 entries. The cash prizes offered are aiding in this matter, but the $100 prize for the best car will hardly compensate for the outlay. The credit for producing a first prize car will be a long suit in the market with any shipper or community. Next to the car lot entries the 100 box exhibits will draw a $100 first prize. For the 50 box lot class $60 first prize is offered; for 15 box lot, $40; for 10 box, $25; 5 box, $15; 1 box, $10. Plate exhibits follow with silver cup, and even a silver cup is offered for the one largest apple.

Many prizes are offered for cold storage, evaporated, cider vinegar, canned, bottled, and domestic by-products. Feature exhibits will also be a big factor. The first prize will be $200, second $125, third $100. The feature exhibits have been under discussion and at one time it was thought they would be cut out and a straight quality requirement considered, but to please the ordinary show visitor the features are a strong factor, and we doubt not that influenced the committee in retaining them.

Watsonville says that "The Apple Show Where Apples Grow" will be a hummer, and extends an invitation to every section of the state to be present.

BUY WHOLESALE

We recently overheard two livestock men at the state fair discussing the matter of feed, and one raised the point that in his particular neighborhood, far from the railroad, he was able at this time to buy wheat even cheaper than barley, and said that he was buying and feeding wheat in preference to barley. We doubt not he is one of the shrewder men of the earth who are bound to succeed and who is closely watching market conditions along the line in which he is most deeply interested. We believe there is one of the greatest factors of success in the farming operations. The farmer grows so wrapped up in the interesting processes of production that he fails to watch the market end as he should, buys at too large a price and sells at a price which prevents reasonable profit. It must be confessed that the problem is a big one and many farmers fail to view it from all sides. Therein lies the advantage of co-operation. The few successful co-operative marketing organizations in this state should be an inspiration to growers to place their products in the hands of those who can devote their time and have the ability to attend to the purchasing and marketing as it should be done. Then the producer can devote his energies to production. In any case, he should not buy from hand to mouth, for even in the poultry business we believe there have been many failures because of not looking ahead and purchasing supplies in a large way when they may be cheaply secured. Such producers must be careful or they will buy at retail and sell at wholesale, and no producer on earth can do that and make a success.

California is not alone in securing improved varieties of wheat. A bulletin of the Iowa Experiment Station reports the work of that station in selecting and breeding fourteen new varieties of winter and spring wheats which have been developed in that section. Regarding the entire list of fourteen varieties the bulletin says: "Without exception they are expected to prove very satisfactory for Iowa conditions. 'They have yielded as high as 51 bushels per acre and none less than 40 bushels.'" This production was in face of the drouth conditions of this season, one of the most severe in years.

The Secretary of State has registered 1699 auto vehicles for the month of July. Surely the automobile business in California must be increasing at a rate which will soon make California, instead of the second chug wagon state in the Union, the first.

It is encouraging to note reports from this year's output of California wheat in effect that it shows a great increase in gluten due to improved quality of seed through selection during the past few years of careful wheat testing.

Ferndale Fair is being held this week.

Agricultural News Notes of the Pacific Coast

Northern California

Butte County's fig crop will be heavy this year.

Hop picking in Sonoma County is now in full swing.

The sugar factory at Hamilton is turning out 1600 sacks of sugar daily.

Placerville, El Dorado County, is shipping about six cars of peaches daily.

Carlots of sweet potatoes are being shipped from Knights Landing, Yolo County.

Los Molinos, Tehama County, has a large force of men extending canals and laterals.

The Madeline Irrigation Company of Lassen County is planning a new irrigation system.

It is estimated that the state will produce about 100,000,000 pounds of prunes this year.

Davis is puffed up over the fact that it shipped the first car of almonds out of the state this year.

Napa County claims the first car of prunes for the year, having shipped one on September 1st.

The cannery at Santa Rosa, Sonoma County, is unable to handle all fruit because of help shortage.

A forest fire of incendiary origin caused the burning of large acreage near Placerville, Eldorado County.

Yuba County reports one-half of its hop crop gathered. Picking machines have been used on only one ranch.

It is said that over 30,000 people attended the races at Sacramento on the day of the $10,000 Governor's stake.

Woodland, Yolo County, is paying $13 per ton for wine grapes. The season is about two weeks later than usual.

Seventy-five Chinese and 100 Japanese are busy gathering the grapes of the great Vina Ranch in Tehama County.

The Chamber of Commerce of Haywards is making strenuous protest against removal of the state game farm to Folsom.

Vacaville shipped 731 cars of green deciduous fruit up to the last of August. This was about 160 cars short of last year same date.

The warm weather of the past two weeks has been acceptable to grape growers of Sutter County and the fruit has sweetened and colored measurably.

Several high priced hop picking machines were destroyed by fire on the Horst Ranch at Bohemia, Tehama County. The loss is estimated at $100,000.

With the other "finest apple producing section of the world" districts Placer County claims place, especially as to lands in Dutch Flat, Towne and Alta sections.

The Winters Canning Company's plant is not handling the usual quantity of Yolo County fruit, but its quality is said to be superior to that of any preceding year.

San Francisco received last week a cargo of 3627 bales of narcissus bulbs said to be practically the entire crop of Japan. This is the first time American buyers have been able to corner this crop.

Central California

The picking of raisin grapes began in Tulare last Monday.

Stockton wineries are paying about $10 per ton for Zinfandels.

Over 21,000 melons were eaten during the carnival at Turlock last week.

Picking of Muscat grapes is now being pushed in all portions of the valley.

A large fruit packing house was partially destroyed by fire in Fresno last week.

Fresno is making an effort to secure the 1915 meeting of the National Irrigation Congress.

Some 1500 acres of timber land on the north fork of the San Joaquin have been destroyed by fire.

A large tract of land near Madera has been purchased and will be subdivided into small ranches.

Kings County Fair Association has leased most of the concessions for its fair to be held September 25-30.

It is expected the new state highways to be built with the $18,000,000 road fund will cost about $10,000 per mile.

Prunedale, Monterey County, has practically all grain sacked and will begin bean harvesting within a few days.

Owing to the lateness of Muscat grapes and the continued cool weather growers are much concerned over raisin drying.

The Pajaro Valley apple growers are manifesting much resentment over the location given their exhibit at the recent state fair.

Cool weather during the last of August caused Malaga grapes to ripen rather slowly and compelled packing houses to close for a time.

Grape growers of Kerman, Fresno County, have pooled their interests and the possibility of handling large quantities has attracted several buyers.

The state engineer's office is investigating conditions of the San Joaquin River with a view to making recommendations as to river traffic to Fresno.

A large number of grape growers of the Turlock district recently held an enthusiastic meeting and decided to pool issues in the marketing of grapes.

Grape shippers have decided to make a comparatively low price on all earlier shipments and thus cause as big demand for California grapes as possible.

Orosi, Tulare County, is developing quite a melon seed industry. Her seed is selling for 21 cents per pound and some growers have cleared as high as $100 per acre.

Tulare County has served its first notice to land owners to eradicate the squirrel pest. Complaint has been filed against a non-resident property owner whose residence is in Los Angeles.

The contract of the Lodi grape growers called for a price of $25 per ton for August delivery and $18 for all later deliveries. Owing to the cold weather the crop ripened so late that but very few were marketed at the higher price.

Southern California

Riverside is taking steps to install a county fair.

Anaheim cannery started on tomatoes on September 5th.

Anaheim is planning for a carnival September 27-October 1.

San Bernardino has a Pekin duck which has built its nest in a tree.

Imperial Valley barley growers are selling in the neighborhood of $1.45.

The Driving Club at Hemet, Riverside County, is holding a harness meet this week.

San Bernardino County horticultural commission has 21 inspectors constantly in the field.

The Anaheim Sugar Factory is making good with its first season's run. It is now handling 22 to 26 cars daily.

A large ranch near Santa Maria, Santa Barbara County, will be subdivided and sold in small holdings.

It is estimated that the 1911 output of grapes in Southern California will be twenty per cent above normal yield.

The first car of oil from the new cotton seed oil factory at El Centro, was received in Los Angeles September 1st.

The Hemet Deciduous Fruit Growers Association has voted to disincorporate and reincorporate as a stock company.

San Fernando Valley in Los Angeles County planted extensively of black eye beans this year and found it very profitable.

Some San Bernardino County growers are protesting against the Johnson grass pest and maintain that the law is not being enforced.

Orange County's four sugar factories are unable to handle all its output and some beets are being sent to Oxnard, Ventura County.

The collector of internal revenue in Los Angeles estimates that the total output of sweet wine in Southern California will be 4,000,000 gallons.

The Lima bean crop at Sawtelle, and Palms, Los Angeles County, will be almost double that of last year. That section will produce about 13,000 acres.

With a better understanding of cotton growing requirements Imperial Valley claims a much better output than last year; over 16,000 acres are ready for the harvest.

The big Waters Cannery at Pomona is making a record of 50,000 cans daily. This amounts to four cars of canned fruit every day. The average price being paid for the green fruit is $25 per ton.

Beet growers of Orange County are engaged in the quest of a sugar beet weighing 26 pounds. It is claimed that one weighing 26¼ pounds was found, but before it was understood that it was needed for exhibition purposes it was sent through the slicer.

The experiment station in Imperial County on this side of the Colorado River near Yuma, has made many experiments in long staple cotton growing and sufficient information has been secured that it is safe to predict that the ordinary cotton in California will ultimately give way to the long staple varieties.

The Coast

Medford, Oregon, has shipped 23 cars of Bartlett pears.

Idaho's total assessed valuation amounts to $330.000,000.

The great apple show at Spokane will open on November 23rd.

The first annual agricultural fair is being held this week at Wilcox, Arizona.

Yakima County, Washington, is planning a million dollar road bond issue.

The Fourth Annual Peach Festival was held at Freewater, Oregon, last week.

Lincoln County, Washington, is averaging 25 bushels to the acre of wheat.

Wenatchee, Washington, is shipping about 20 cars of fruit daily, mostly peaches.

Walla Walla, Washington, is claiming an average of 53 bushels of club wheat per acre.

Threshing returns of Eastern Washington show wheat running from 25 to 60 bushels per acre.

The Spokane County fruit growers will market their fruit through the Yakima association.

Watermelon growers at Wapato, Washington, have shipped 70 cars to various Sound points.

One alfalfa seed producer at Yuma has marketed over 600 pounds to the credit of a 20-acre ranch.

Farmers of Wilcox, Cochise County, Arizona, are discussing the matter of co-operative marketing of products.

The Farmers Union Warehouse Company at Goldendale, Washington, is shipping all its products by water.

Three counties of Eastern Washington claimed a shipment during 1910 of 3018 cars of fruit, 2400 of which were apples.

A great tract of land in Bonner County, Idaho, will be drained and made tillable through a system of pumping.

Alfalfa seed producers near Yuma are marketing a big crop. 20,000 pounds were delivered at Yuma on one day last week.

Nearly all of the $23,000 appropriated by Congress to relieve fire sufferers of the Coeur D'Alene district has been disbursed.

The sugar factory at Lehigh, Utah, begins operations this week. It is expected the factory will have an output of about 100,000 tons.

Pacific County, Washington, has no rival in the West in the production of cranberries. One grower will have a crop this year which it is estimated will net $100,000.

A hybrid wheat developed on experiment grounds at Pullman, Washington, produced this year at the rate of 57 bushels to the acre.

Spokane, Washington, eats 100 cars of onions more than are produced there and there is a feeling among the farmers that they should raise that 100 carloads at home.

Effort to reclaim 50,000 acres of swamp land known as the Klamath Marsh in Southern Oregon and Northern California have been abandoned because of the large content of alkali.

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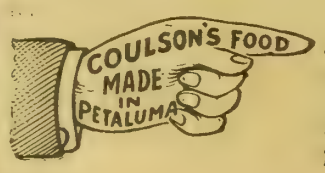

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Profit in the Poultry Yard

Practical poultry people who may have ideas from their experience as to methods of feeding and housing and general care of poultry will confer a favor upon the Cultivator and its circle of readers by sending in concise accounts. Mrs. Basley is always willing to answer queries, which with the experience of others should make this a most valuable feature in poultry life on the Coast. Opinions or matters of a personal nature should be omitted, but a concise statement of facts is always valuable.

ADVANTAGES OF TRAP NESTS.

It has been learned by means of the trap nest that many hens rarely, and sometimes never, lay a fertilized egg. By marking each egg that is intended to be used in incubation with the layer's leg band number, those hens which lay nonfertile or weak-germed eggs, can be detected, and their eggs avoided.

It is no new discovery that the hens which lay well during the fall and winter months are the ones that pay best from the market-egg standpoint; but when we analyze the detailed egg-records of several hundred individual hens, recorded by many different trap-nesters, we find that the best fall and winter layers are also, as a rule, the best summer layers. By "best winter layers" we mean the individual hens that lay from twenty to twenty-six or twenty-eight eggs per month; we learn that the genuine "persistent layer" as an individual is pretty certain to lay prolifically the year 'round.

Poultrymen who have never handled the individual hen as a unit, but judge the matter wholly by the records of flocks as a whole, have frequently claimed—and have found apparent reason to support the claim, that the type of hen which lays well in winter is not the type that lays well in summer; but trap-nest records of flocks that have been competently handled for eggs all through the year do not support that theory. The hen that does not lay freely and profitably in summer when properly handled, does not, as a rule, show up on the trap-nest records as having laid remarkably well, either the previous or following winter. There are exceptions, of course, but they are relatively few. It is a most excellent idea to keep the stock carefully culled of drones and moderate layers, all the time, summer and winter. It is the "persistent layer" that pays the year 'round profit in market eggs, and she is the true "laying type" that trap-nesters count upon to perpetuate the prolific-laying habit in their stock.

Summer has its own peculiar conditions that antagonize egg production, and the profits are shrunken unless the adverse conditions are overcome. The "strictly fresh egg" is always in demand, but eggs which are allowed to remain in a hot nest, covered by sundry hens that visit the nest throughout the day, lose considerable of their first freshness by night; whether the eggs are to be incubated, marketed soon, or held in storage for future marketing, their quality has been lowered. Trap-nesters remove the eggs from the nests from three to five times during the day; as a rule the trap nest is an individual nest, and the layers are not able to crowd two, three or more at once upon a nest of eggs, overheating eggs and hens, both, as is frequently the case where the ordinary box nest is used.

Then, again, trapnesters have found by experience that summer troubles with broody hens are greatly lessened by judiciously handling the traps. The frequent handling of the layers and prompt removal from the nest seems to diminish their brooding inclinations, and they are more easily "broken up" when they do become broody. Many persistent layers in the incubating breeds do not become broody at all when using the trap nests, but continue to lay right through the summer. "Egg eating is a vice practically unknown where these nests are used," is the report of many who have had long experience with good trap nests.

It is an interesting fact that quite a number of the most successful trap-nesters installed and began to use trap nests during the summer months. By fall they had become quite familiar with their use, and were in a position to exercise good judgment in trap-nesting and culling the pullets, and the yearling hens through the molting period. It will be found that the great layers are remarkable for a tendency to molt without apparent loss of vigor, and they will continue to lay during a considerable portion, or the whole, of that period.

It certainly is an excellent plan to get the trap nests installed during the summer months, become familiar with handling them without loss of time, and then one is prepared to start the new generation of layers upon the right road.—Coleman's Rural.

WATER FOWLS.

Wonderful improvement has been made in this class of fowls within the past 20 years. It is a class that seems to receive but little attention from the rank and file of poultry breeders. It has supporters, however, who are putting in their best licks with the breeds they handle, and as above indicated, they are making tracks that are easily seen.

It has not been many years since about the only thing found in the way of geese was the proverbial old white and gray ones, scarcely larger than a Plymouth Rock hen of today. The same was true in ducks; the old-time puddle duck was in the swim, and nothing else appeared upon the pond. But how is it today? If you want to investigate a little down the line just take a trip through the Middle West or Southwest where water fowl breeding is carried on to a degree worth noting and visit a number of the state and county fairs in those sections and take a look at the water fowl exhibits. In the place of the old-fashioned crumpled-winged scavenger of your father's or grandfather's horse lot that you may have visions of yet, you will see the lordly dark gray Toulouse and the pure White Embden, and the Gray African, which weigh as high as twenty pounds, and as one visitor I heard expressed himself, "Why, they are as big as cows."

They are wonders when we stop to think about them, and that they are all the result of man's work and skill. The Toulouse and Embden have thick, short necks, and long, deep bodies, while the African has a long neck with a broad head surrounded by a large round knob, with a heavy dewlap on the throat. They are all heavy, weighing when fully matured, 18 pounds for goose, and 20 pounds for gander.

Then we have in addition to these the Brown and White Chinese and the Egyptian, all much smaller in size, but bred to a high point of perfection and egg production. The Chinese are

rather short and rounded in body, with long, slim, gracefully arched necks. The head is slim, with a large, well-rounded knob on the top. This makes rather a peculiar looking, but attractive and fancy fowl. They make a very showy fowl for the farm with the pond or lake, or the city park.

In ducks you will find twelve different varieties represented. The prominent large ducks are the Pekin, and Aylesbury, both white; Rouen, a beautifully colored duck similar in colors to the wild Mallard; Muscovy, in white and colored. These ducks attain to the weights of 8 pounds for duck and 9 pounds for drake when fully matured. Think of these taking the place of the ducks of old that could hardly be found to weigh half that much.

The Pekin and Aylesbury are used principally for the big duck markets, where they are raised by the tens of thousands.

The Cayuga and East India are medium sized black ducks, bred but little except for variety and show purposes.

The Gray and White Call, and Blue Swedish, are the small ducks, but are good layers. The Crested White is bred for the ornamental top-knot or crest which adorns the top of its head. It is, however, of good size and is all right for market purposes.

The Indian Runner is the latest achievement in duck circles. It was imported from the north of England but a few years ago, and has proven to be a great layer. It is slim and active in its make-up and occupies the position among ducks that the Leghorn does with chickens. In fact, a good many remarkable laying records have been brought out. Truly the range of variety in type and color in both geese and ducks is wide enough to satisfy all comers.—Southern Ruralist.

SOME POULTRY TERMS.

There seems to be a somewhat hazy notion among amateurs as to the exact meaning of the terms used to designate young and old stock. A pullet, strictly speaking, is a female under one year old. After she had attained her full maturity she is a hen, but in the trade we speak of a fowl as a pullet until she has completed her first year's laying. Therefore it is correct to speak of her as a pullet until she is eighteen months old or has begun her first moult. A cockerel is a male bird under one year old, but he is usually spoken of as a cockerel until he has at least entered well upon his first year as a breeding cockerel. Cocks are older males, usually having passed through one season's breeding. If you order cockerels for breeding purposes you will get birds that have not been used for breeding. When ordering pullets you will get females that are under 18 months at the most. A cockerel should never be used to breed from before he is a year old. A pullet, if she begins to lay at six months, may be bred from at nine months of age, but she will be better if not bred from till she is one year old. The progeny from mature stock is much more vigorous and of larger size than that from immature stock.

There are still many people asking about capons, imagining them to be something different from common chickens. Capons are male chickens which have been caponized or desexed in order to enable them to attain larger size. A capon produces a better class of meat than a cock, is docile, easily fattened, and usually ready for market at the age of one year or 18 months, depending on the time of year and the prevailing prices. Many poultrymen caponize all surplus cockerels, especially the late summer ones. They bring 20 cents and upwards per pound at a time when old cocks bring from three to five cents per pound.

COOPS AND EQUIPMENT.

A collection of the different kinds of chicken coops which one sees in a trip through the country would show a wonderful variety, writes Grant Davis in Poultry News. From the barrel with stakes driven in front to confine the hen to the well-made brooder pen which can be purchased from the poultry supply houses, there are all grades and kinds. Perhaps the most common form is the A-shaped coop with slats nailed across the front to keep the hen in and allow the chicks to pass out. When you want to shut it you set a board against it and prop it up with a stick, and when you want to let the hen out you tip up the front and balance it on a prop. You never know how many chicks you are going to kill when you let it down.

About as good a coop as I have used I have made out of store boxes, and they require little work to make and are cheap. I take a good tight box costing ten to fifteen cents and about 20x30x14 inches, or it may be a little larger or a little smaller. Take one side of the box off, nail cleats on it and make a floor of it. Make the dimensions of this floor such that the finished coop will set over the floor and not on it, thus preventing rain from running in on the floor. The top of the box which is, we will say 14x30 inches, becomes the front of the coop. One-half of this is boarded up and in the opening a screen door is made to slide back and forth, opening or shutting the coop. This door may be covered with one-inch chicken wire netting. If it is desired to shut the coop tightly, a board door is fastened on the outside with hinges so as to be opened and closed easily. This door is not necessary only for early chickens. The sliding screen door will be found a great convenience. It may be opened a small space to allow the chicks to pass out while confining the hen, and it is easily closed at night to keep out all nocturnal enemies. The movable floor is an advantage as it can be readily taken out and cleaned. This should be done occasionally and some dry earth or sand sprinkled on it. The coop will then be always dry and clean and is much better than a ground floor which will be damp in wet weather and breeds disease and gapes.

The coop should be painted to make it last and over the top is nailed a strip of rubberoid or other roofing material to shed all rain. You then have a coop which is hard to improve upon and with a little care it will last for a number of years.

I make considerable use of a larger coop four or five feet square with sloping roof. It is made two and one-half feet high on rear and three and one-half in front. It is made of one-half inch pine boards covered with roofing paper and with a sliding screen door. About forty young chicks may be put in one of these coops with one or two hens, and when the chicks are half grown, roosting poles are placed within and the pullets allowed to remain until it is time to remove to winter quarters. When using hens for hatching, these coops are just the thing to set them in. They will hold three each, and supplied with food and drink, the hatchers will usually set their time out in an orderly way and be free from molestation.

These are the days when strictly fresh eggs are at a premium and care should be exercised by the farmer to market none but strictly fresh eggs. The eggs should be gathered frequently during the day, for if left in the nests, even for one day during very hot weather, they commence to spoil. When a nest full of eggs is found in the hay mow they should be carefully candled before being sent to market or they may be found to be in the same condition as eggs purchased by Paddy Doolan. Paddy went one day to the store to buy eggs. "What are eggs today?" he asked. "Eggs are eggs today, Paddy," replied the storekeeper, looking triumphantly at two or three lady customers who happened to be in the store. "Faith, an' I'm glad to hear you say so," said Paddy, "for the last ones I got here were chickens."—Kansas Farmer.

A reader inquires: "Is charcoal a good thing for fowls, and how do you feed it? Which are the best layers, White Leghorns or White Wyandottes?" Charcoal is the best cleansing medicine for fowls and is a preventive of disease. Ashes from wood fires may be thrown into the poultry yards and the chickens will pick out the charcoal, or a few ears of corn can be put in the oven and charred and then fed to them. The Leghorn family have the reputation of being the best layers of any breed and probably head the list as spring and summer layers, but take it all the year around, winter and summer, the Wyandottes will not be far behind them in egg production and being larger and plumper are much better table fowls.

Don't try to see how small an amount of grain or feed you can winter the poultry on; feed generously, and note the returns. Often just a small increase in the amount of feed will mean several dozen more eggs, and these extra eggs will perhaps balance the scale on the right side for your poultry keeping.

In building a new hen house, hang the roosts from the roof with heavy wires, with a dropping board 6 inches below. If the wires are fastened in hooks at each end of roosts and at each corner of dropping board they can easily be taken out for cleaning.

Feed well the old hens that you intend to sell when they are through laying. Watch the market and sell them just before the rush sale of poultry begins in the fall. Get all the eggs you can from them this summer, but sell them while the price is still good.

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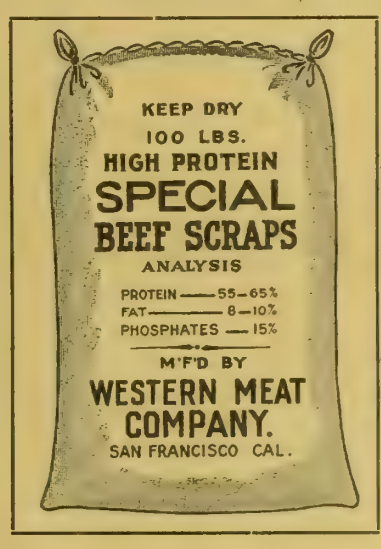

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ed Spider on Beans.

A subscriber sent to this office bean eaves that had been attacked by insects, some showing almost a skeleton f the leaf. These were referred to rof. H. J. Quayle of the Pathological aboratory and he reports that the rouble was doubtless caused by red pider. He adds: "This trouble is not sually severe enough to demand reatment. Treatment for this pest s ordinarily application of sulphur vith lime, one-fourth lime and three-ourths best grade of sulphur; or sul-hur, 30 pounds; lime made into milk f lime, 15 pounds; water 200 gallons. Or use commercial lime-sulphur, 4 to 5 gallons with 200 gallons of water.

Alligator Pears.

What climate and soil are most suitable for alligator pears? What is bearing age? At what season should they be planted?—K. M., Fresno.

Climate suited to the orange is approximately right for the avocado or alligator pear, though two points have yet to be proven out, that is, degree of cold it will stand and degree of heat. It will hardly stand as low temperature as the orange, and the amount of heat is still a question. We know of no profitable trees in the hotter interior valleys, but they are being given a test which will require a few years to prove out. Soil conditions preferred are sandy loam with sufficient drainage to permit of a warm soil.

Bloody Milk.

I have a two-year-old heifer that dropped her first calf two months ago. Some two or three weeks ago she began giving bloody milk from one quarter and keeps it up. There are many big clots in it and it is all bloody. The milk is not ropy, and there is no cake. Milking does not seem to pain her in the least. She seems well in every way and has a good appetite. I have been bathing with hot water and rubbing with camphor and lard twice a day. Any advice you can give me will be greatly appreciated.

Should I milk her three times daily or will the extra irritation thus caused do more harm than good?—W. P. R., Claremont.

While a bruise on the udder may cause bloody milk, I am inclined to think that in heifers the cause is pressure within the cells. Unless the milk flow is great enough to distress her, twice a day milking is sufficient. There is almost nothing to do in these cases but let time work it out. The camphor tends to dry up the milk flow and should be used carefully on the portion of the udder alone that is affected. The clots that come usually indicate that the healing process is commencing. The camphor is fully as good without the lard, but if much rubbing is done the lard prevents chafing. I have had a number of cases like this in heifers and they cure themselves before the next calf comes.—M. E. S.

Pruning Peaches.

What is the best time to prune peach and apricot trees? Have been told to prune heavily after bearing. They are young trees and have borne heavily.—Subscriber, Santa Ana.

The ordinary time for pruning of deciduous trees is in the winter, when they are dormant. There is an established saying: "Winter pruning for wood and summer pruning for fruit." With the peach you must be careful, however, in doing very heavy summer pruning. Summer pruning with the apricot is more common. It is now too late to do that. The proper time is in July or immediately after the removal of the fruit. Severe cutting is made, heavy irrigation is given, when a strong growth of new wood is induced, which gives abundance of fruit buds for the coming year, but heavy summer pruning at this time would only result in cutting off many of the

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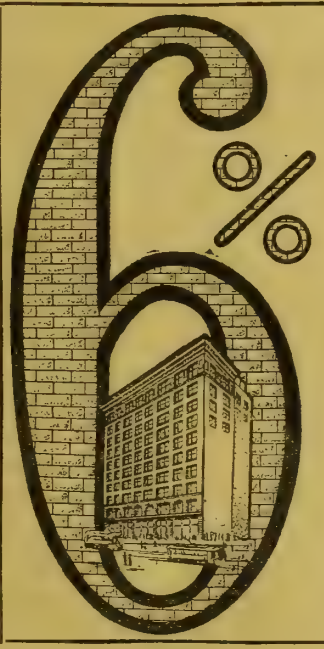

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If you want to trade your farm for some other farm, or even city properties, give us all the details; or, if you wish to purchase a new farm or ranch, ask us to send you a list of our different properties.

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Just Hatched White Leghorn Chicks every month, from select, heavy laying, mature stock. No pullet eggs used. Lodi Hatchery, E. Elm St., Lodi, Cal.

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Rose Comb Black Minorcas, nine years line bred. Stock and eggs in season. Eleanore Minorca Farm, R. D. 1, Los Angeles, Cal.

The Great Navajo Strain of Barred Rocks—Eggs $3, cockerels $3. E. E. Hardy & Son, Santa Ana, Cal.

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Good Barred Rock cockerels, $1.50 to $2.50 each according to age and quality. G. L. Hawley, Madera, Cal.

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PRUNING PEACHES.

(Continued from Page 231.)

fruit buds for next year's bearing, and not give time for formation of new ones. Now, we would wait until winter and give the regular tree shaping pruning, removing cross limbs and topping according to former growth of the tree.

Time for Cutting Eucalyptus.

We wish to use eucalyptus for fuel. Please tell us the best time for cutting so they will sprout and keep on growing.—M. E. F., Goshen.

This is a question which we wish would bring out a number of answers from those who have had experience. Personally, we have cut trees any time after Thanksgiving and before the first of January and have never known them to die. They seemed to be dormant, then after the rains and the warmer weather of spring they have invariably sprouted. We have known others—only two, however, cut in spring when sap was flowing strongly, to die. We have not observed this question to an extent sufficient to justify the claim that a rule has been established.

Pendulous Crop.

I have a young turkey that has a very large crop; it hangs down and seems to bother it when running. Otherwise seems to be in perfect health. What is the cause of this and what is the best remedy?—Subscriber, Orland.

Your turkey has what is called pendulous crop. This defect comes from it having been fed a wet mash, and too much of it, which has weakened the crop. It may possibly recover if cautiously fed with charcoal mixed in it, but the only sure way is to cut a small piece of skin the shape of a fish out of the outside skin that hangs down and sew up the cut with about two stitches of white sewing silk, tying off each stitch. Give only a little food easily digested. If you leave it without treatment the food may hang in the crop until it ferments and then it poisons the turkey.—Mrs. A. B.

Roup.

About three months ago I noticed my young turkeys' eyes being closed in the morning. When I opened them a white froth would come out. There was a discharge from the nose and eyes swelled and shut. The lower part of the mouth gets a dirty crust in it and some of them have yellow spots in their throats and mouths. They cough or sneeze nearly all the time, eat until they can't see, always seem hungry.—Mrs. C., Orange.

Your turkeys and your chickens also have roup. I would advise you to cure them as quickly as possible, and then sell them for the market and do not keep any of them for breeding next year. Disinfect the premises as thoroughly as possible either by spraying the houses and yards or by growing a crop if they are at large. Roup is very infectious and it is very difficult to keep the fowls free of it if once it gets in.

One of the best cures is as follows: One tablespoon of castor oil, half a tablespoon of turpentine, half a tablespoon of camphorated oil, one tablespoon of kerosene, a teaspoon of eucalyptus oil, and four drops of carbolic acid. Shake before using. Squirt a drop up each nostril and into the cleft of the mouth. This is an excellent cure and cheap. A small sewing machine oil can is very handy to use in administering this.

Mix Germozone in water according to directions and dip the head in. Holding it under whilst you count three slowly. Wipe off the head and especially the nostrils and burn the rag. If you cannot get Germozone, buy ten cents worth of permanganate of potash and put a little into water until the water is pink. Then add a small bit of bluestone as big as a pea to a quart of water and dip the head in that. There are other prepared remedies that are excellent. All these contain the permanganate of potash and bluestone properly mixed, and can be easily and quickly used. Get rid of the lice, for if the turkeys and fowls have roup they are sure to have lice.—Mrs. A. B.

Self Milkers.

Referring to a question recently asked in the Cultivator, one which often comes to this office, Mr. J. C. Thompson of Imperial writes:

If "Subscriber," Visalia, will take an old, small, but thick horse collar and place it top down and face in front (upside down and wrong side out) on his self milking cow she will discontinue that bad habit.

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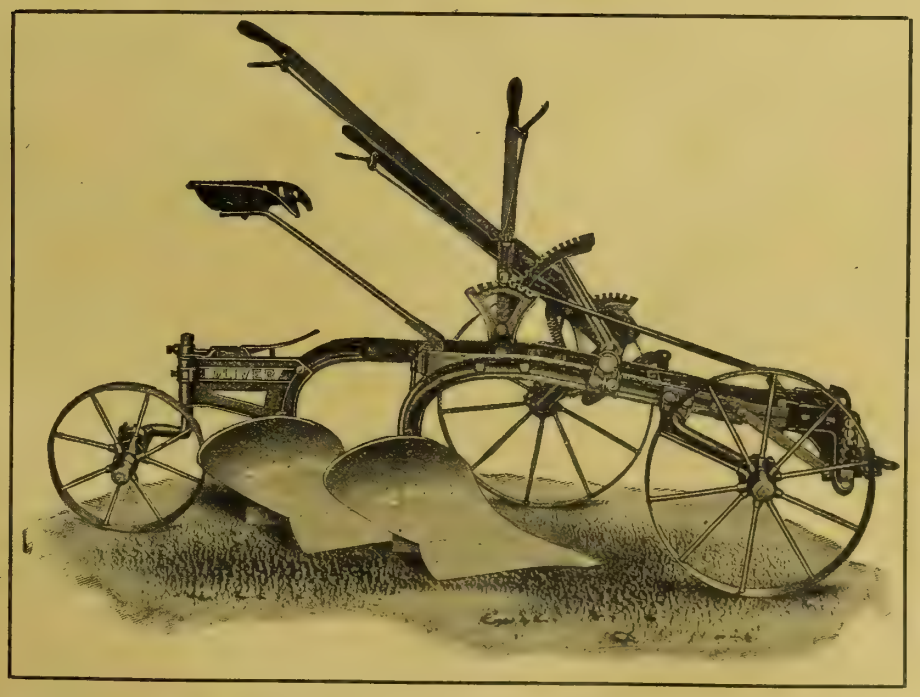

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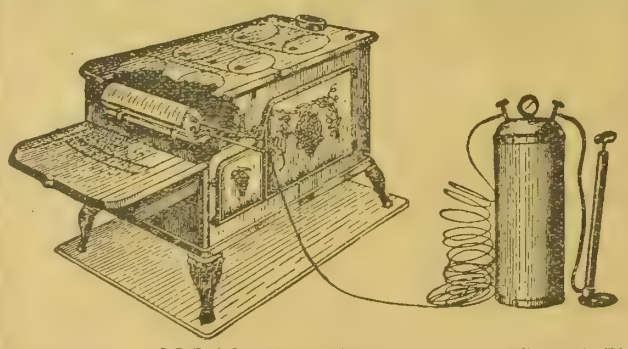

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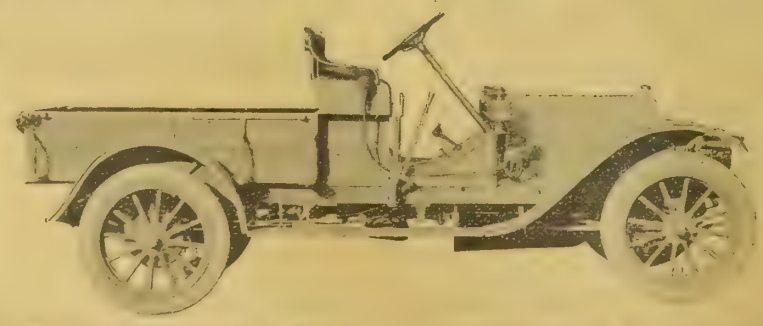

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Household Department

JUST RUMOR.

Sing ho! for the thrill of the shimmering dawn
When the heart of the morn is a-quiver;
When the hilltops are kissed by the reddening mist
That slowly creeps up from the river,
The blood's newly stirred by the song of the bird,
Though scoffers may scorn and deride it.
To rise with the sun is most glorious fun,
I have heard—but I never have tried it.

Sing hey! for the joy of hard, health-giving toil;
Of setting the pace for your neighbor,
Of tending a cow till your sweat-beaded brow
Is set with the diamonds of labor,
Of hustling in hay through the hot summer day;
When once you have fairly begun it,
A working career fills the heart with high cheer,
I have heard—though I never have done it.

Sing hi! for the sternly abstemious life,
When one has the courage to risk it.
There is never a food that is nearly as good
As water and steel-wire biscuit.
No wise man would eat either pie, cake, or meat;
They injure one's conscience and credit,
So I've read—though I never have led it.

—New York American.

UNINTENTIONAL TEST.

I have accepted! Fifteen hundred a year. Isn't that fine?

Henderson spoke with a radiantly happy accent; but the girl only turned her face away quickly from the young clergyman and looked across the fields toward the tree-buried village. To be sure she was glad that Dwight had been offered a remunerative field. But two thousand miles is far to go; and going away is often easier for the one that goes than for her who stays.

"We shall miss you—your mother especially," she conceded, nervously playing with the leaves of a plant. "Yes;" it is fine. I am glad for you."

"Come down for a walk in the orchard," he begged, brightly. "I want to tell you about it."

"I thought you had told me about it," she observed with quiet mischief, though her pulses quickened.

"Oh, I want to—to tell it over again from another point of view."

This time the color came into his own face. She knew—or rather she had hoped—that he was waiting only for the prospect of a living salary before telling her of something which she was willing to hear after due resistance.

She looked at him with a glow in her cheeks. She liked to hear him speak so.

"Mother's long sickness has kept me in debt somewhat," he ruminated, with a sigh; "but now I will be able to get ahead. There is a fine house waiting in the new parish, Marion. When I have it all ready and a little money saved up then you will—"

The quiet cool of darkness was settling. Dwight paused to watch a humming bird dart in and out of the porch before he finished the sentence with a softly queried "Won't you?" He could just see her head bow in promise. A silence ensued, and before it had grown much darker he said his good night and departed.

The night was early yet. Dwight had left her unconventionally soon for his mother's sake. Marion found her father in sociable converse with an old friend he had unexpectedly brought home for the night, a grey-haired guest who had spent his boyhood in Eastwood and was stopping over now to freshen old friendships. Marion liked him very much.

"I've enjoyed being in the old town again," he told Marion, when a little later her father had gone to hunt up some papers. "I never want to forget it and I never want to be forgotten in it. We have been talking of that and your father tells me—" he switched off suddenly, a keen look on his fine face—"that you love your church very much."

Marion blushed unguardedly; that word was very fresh in her thoughts.

"You have a fine young minister in your church," Mr. Courtland persisted, his slim, wavering fingers passing thoughtfully over his soft white hair. Marion dropped her glance as the old man continued: "He hasn't enough to live on and maybe—maybe there's a girl waiting somewhere patiently. Now shall I tell you how I am going to make myself remembered?"

Tomorrow your father is going to draw up papers for an endowment of twenty-five thousand dollars, the interest to go toward the minister's salary."

Marion's face showed her frank gladness. "Oh, that will be glorious for the little church," she exclaimed, delightedly. "But you are too generous—"

"Tut! tut!" he interrupted. "It's nothing. I could do much more; but it wouldn't be good for the church. Now—now wouldn't you like—nobody knows this yet but your father and myself and you—wouldn't you like to be the one to tell the minister?"

His manner showed an eager, especial interest. Marion knew her father had been speaking of Dwight Henderson and herself in the same breath. This dear old bachelor friend with the fabulous wealth understood exactly. He was match-making in his own delightful way.

Lying wakeful that night she pondered with regret the circumstances which had led to the unfortunate situation. The thought of leaving her home and her father grew more and more intolerable now that it seemed so unnecessary.

But Dwight had made up his mind and committed himself. In the woods, when she had playfully asked whether he would recall his acceptance at her bidding, he told her gravely that it was too late, that even if the parish raised his salary he could not now withdraw his promise. And she had agreed with him.

With a sigh she told herself that she must not let Dwight know she had so much as thought of looking back. But the regret was still with her when she awoke in the morning.

Dwight was coming this evening to tell her father. Meantime she went out early for a call on Mrs. Henderson. The two were close friends from days far back, therefore made the most of their morning. Mrs. Henderson knew somewhat of the mill town to which Dwight was going.

"It won't be such a dear environment as we have here, my girl," she sighed, wistfully. "But," she continued, more cheerfully, "it will have its compensations and I know you will make the most of the opportunities it affords."

The letter, written when she reached home, was dispatched to Dwight by her father's hand, after lunch.

"I know you are too strong to spend time in vain regrets over this missed opportunity," was all the comment she allowed herself. "I shall be expecting you this evening."

"And when he comes," she told herself, softly, "he will scatter my disappointment to the four winds." There was a note of pride in her voice.

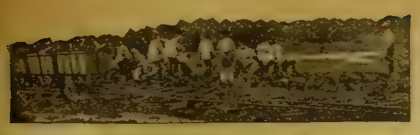
She had not expected to hear further of him until he called, in accordance with his habit, about dusk. But two or three hours later a boy brought a note. It was hastily scrawled and only a word or two:

"Am going to decline the call by telegraph. Do not think hardly of me and be sure I will come tonight."

The dusk came at last and with it Dwight, depressed, but not too much so to notice her own dejection.

"You are disappointed—very much disappointed?" he instantly remarked, with a slow, desponding interrogation.

"Oh, Dwight, I am," she admitted frankly, at the same time turning



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To clean willow furniture use salt and water. Apply with a nail brush, scrub well and dry thoroughly.

away her eyes, which were fast filling with the weight of her disappointment.

"Come out into the orchard while I tell you about it," he begged, in what seemed to her a hatefully humble tone.

But she declined with a slow shake of her head. Nor would she look at him. During five minutes of silence she did not know what he was doing, though she heard him sigh once.

"Marion!" he said, finally; and there was a note in his voice that brought her about face in spite of herself, to meet the direct glance of his brown eyes.

"Are you so disappointed that you turn against me?" He asked it gently, but in a tone that required an answer.

"I—I ask too much, I suppose," she faltered; "but if you have declined that call I feel that I must—that I want to think over the promise I gave you last night."

He looked at her with whitening face and set teeth.

"I have declined it," he admitted, slowly and quietly, "beyond all chance of reconsidering. You—you are as free as you please."

He had risen wearily as if to go. There was a step on the stair just then and Marion recognized her father's coming. She was not sure whether she was glad or sorry for the interruption.

"Hello, Dwight!" Mr. Howell greeted, jovially. "You're a good fellow. And say," he begged, as he came closer and put a hand confidently on Dwight's arm, "try not to have any hard feelings against me. I was so busy with a friend this afternoon that I forgot all about your letter."

A wave of relief came over Marion's face. She had thought her father perhaps a trifle overstrung. But she did not immediately recognize the letter in question as the one she had sent Dwight that noon.

"From you, Marion," Dwight commented, interestedly, as he paused for permission to open it.

"Oh, no, no," Marion hastily intervened. She had suddenly comprehended that the letter could have had nothing to do with Dwight's disappointing action. "Don't open it yet, Dwight. But tell me—I don't understand—tell me first why you declined the call?"

Her tone was perplexed and questioning. Dwight, wonderingly, came closer.

"I was driving across country this morning with Doctor Bolton," he began, venturing to take her hand, "and I told him for the first time of the call. But"—the gloom in Henderson's face deepened—"he told me that under no circumstances—under no circumstances, Marion—must I take mother to that climate. And he convinced me of it. I couldn't leave mother behind, could I, Marion?"

"Of course not," she admitted, the color in her cheeks heightening as she held out her hand. "Forgive me, Dwight," she asked, softly.

He took her other hand and drew her close, with a gesture of the night before.

"It was mighty hard to give up the chance, Marion," he confessed, a world of regret in his voice; "mighty hard to think of a long wait before you and I—"

"Come out into the orchard, Dwight," she invited, temptingly. "Bring the letter. We'll read it together."—Journal of Agriculture.

FURNITURE POLISH.

Alcohol	1 pint
Turpentine	1 pint
Boiled Linseed Oil	1 pint
Japan Dryer	1 pint

Shake well before using.

Another.

Linseed Oil	1 pint
Strong Vinegar	5 ounces
Spirits Turpentine	2½ ounces
Hydrochloric Acid	½ ounce

Sometimes a little chloride of antimony, (butter of antimony,) say ¼ ounce, is added to the mixture.

PERMANENT SOAP BUBBLES.

Castile Soap	¾ oz.
Cold Distilled Water	1 pt.

Shave the soap very fine, and allow the water to stand upon it for a day. Pour off the supernatant solution, and mix it in the proportion of two ounces to one of glycerine. Blowing a soap-bubble is a capital "dodge" for keeping children still.

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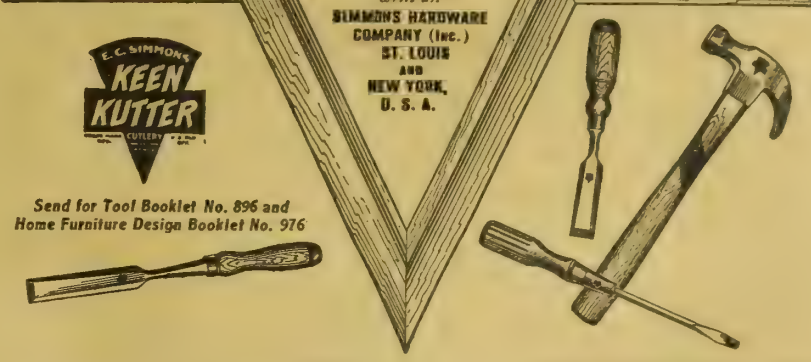

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San Francisco-Los Angeles Produce Markets

Los Angeles Market

LOS ANGELES, Sept. 13, 1911.

Butter.

Butter is firm with good demand, and rather light receipts; yesterday's aggregate was 47,695 pounds. An advance of one point is noted on fancy. Others same.

Prices to trade 2½c in advance of the following Produce Exchange quotations:

Extras	26½
Firsts	25
Ladies	23
Country	20

Cheese.

Local Anchor	16
Oregon Daisy	16½
Northern Fresh	16
Domestic Swiss	18
Imported Swiss	30@32

Eggs and Poultry.

An advance of one point is noted on both candled and case counts. Market very firm.

Paying prices f. o. b. Los Angeles are:

Local ranch, candled	35
Case count buying price	31
Eastern	25@26
Pullets	20

Dealers pay for live poultry f. o. b.:

Hens, per lb	15
Roosters	6
Broilers	14
Fryers	12
Roasters	14
Turkeys	23@27
Ducks	12
Geese	10
Guinea hens, doz	4.00
Squabs, doz	1.75

Live Stock.

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs	7½
Prime steers	6
Heifers	6
Calves, per lb	6½
Sheep, ewes, per head	4.75
Lambs, per head	3.75@4.25
Wethers	5.00@5.50

Potatoes.

Wholesale prices are:

Sweets, yellow, ctl	2.00@2.50
Highlands, clt	1.75@1.85

Onions.

Wholesale quotations:

Australian Red, ctl	1.75
Silverskins, sk	1.50
Yellow Danvers, clt	1.25
Garlic	5@6

Vegetables.

Wholesale quotations:

Artichokes, northern, doz	75@1.00
Beets, doz bunches	20@25
Bell peppers, lb	4@5
Beans, wax	6@8
Beans, Limas	5@6
Green chilis	3@5
Chilis, dried	15@20
Cucumbers, lugs	35
Cabbage, sack	75@1.00
Cabbage, red, lb	3
Cauliflower, doz.	1.50
Celery, new crate	1.75@2.00
Carrots, sack	1.00@1.15
Corn, lug	45@50
Egg plant	3@5
Horseradish lb	12½
Onions, green, doz bunches	20@25
Kohl-rabi, doz bunches	40
Leeks, doz.	45@50
Lettuce, crate	1.00@1.25
Mushrooms, basket	3.50@4.00
Oyster plant, lb.	5@6
Okra	5@6
Peas, lb	6@8
Parsley, doz bunches	25@30
Parsnips, doz bunches	45
Radishes, doz bunches	15@20
Rhubarb, Strawberry	1.00@1.25
Spinach, doz	15@20
Squash, summer	30@40
Spearmint, doz	25@30
Tomatoes, lug	25@35
Turnips, sack	1.00@1.25
Watercress, doz	25@40

Citrus Fruits.

Valencias	3.50@4.00
Grapefruit	2.00@4.00
Lemons	2.00@3.75
Limes, hundred	1.25

Fresh Fruits.

Wholesale prices on the market are:

Apples, W. Astrachan	1.25
Apples, Alexanders	1.00
Apples, Bellflowers	1.25@1.35
Apples, Gravensteins	1.50@1.65
Apples, Crab, lug	1.50
Bananas	4
Casabas, crate	1.50
Cantaloupes, small	70@75
Cantaloupes, large	1.15@1.25
Figs, box	75@1.25
Grapes, Thompson Seedless, lb	3
Grapes, Black Hamburg, lug	65
Grapes, Muscats	65
Grapes, Malagas, lug	90@1.00
Grapes, Tokays	1.00@1.25
Loganberries	6@7
Nectarines, lug	1.00@1.25
Peaches, lug	50@75
Pineapples	7@8
Plums, Clymans, lug	1.50
Plums, Satsuma	90@1.00
Plums, Tragedy	1.50
Prunes, Simoni	1.25@1.50
Pears, Bartlett, lb	5
Blackberries	6@7
Raspberries	10@11
Strawberries	4@6
Watermelons, lb	½@1

Dried Fruits.

Wholesale prices to retailers are:

Evaporated Apples, fancy, lb	15
Apricots	16@17
Figs, box	1.65@2.00
Peaches	12½@13
Nectarines	12
Pears	12@13
Prunes	10@16
Plums	10

Beans Dried.

Wholesale quotations:

Limas	6.75
Black eyes	4.55
Pinks	5.25@5.35
Lady Washington	4.25
Small white	4.10@4.25
Garvanzas	4.50
Bayous	4.50@5.00
Lentils	6.00@7.00
Mexican Reds	4.75@5.00

Nuts.

Wholesale quotations:

No. 1 soft shell walnuts	18
Almonds, IXL, lb	19@20
Pecans, polished	15@17
Peanuts, Eastern	8
Peanuts, California	6
Pine Nuts	18

Honey.

Wholesale quotations:

Extracted water white	8
Extracted light amber	7
Comb water white	16@17
Light amber	13@14
Beeswax	30

Hay.

Buying prices f. o. b. cars Los Angeles are:

Barley hay	12.00@13.00
Wheat hay	11.50@12.50
Tame oats	15.00@16.00
Alfalfa	12.50@13.50

Grain.

Wholesale selling price f. o. b. Los Angeles:

Wheat, new, cental	1.70@1.75
Corn	1.70@1.95
Kaffir	2.10
Millet	3.75
Popcorn	4.75@5.00
Egyptian corn	1.65
Red oats	1.80
Seed barley	1.50
Milo	1.95

Feed Stuff

Wholesale selling price f. o. b. Los Angeles:

Alfalfa meal	1.15
Beef scrap	3.10
Cracked corn	1.90
Cracked wheat	1.85
Shorts	1.95
Bran	1.70
Oil cake meal	2.50
Feed meal	1.95
Rolled Barley	1.75
Middlings	1.85

San Francisco Market

SAN FRANCISCO, Sept 12, 1911.

Butter.

Butter is held very firm with a cent advance on extras, with a very slight decline on the lower grades.

Prices to trade 2½c in advance of the following Produce Exchange quotations:

California extras, lb	27
Prime firsts	24½
Firsts	23½
Seconds	22

Cheese.

Cal. flats	11@14
Cal. Y. America, fy, new	14½@15
Oregon, fancy	13½

Eggs and Poultry.

Fresh eggs are meeting with strong demand and a material advance is noted.

Official quotations of the San Francisco Wholesale Dairy and Produce Exchange are:

Fresh ranch extras	35
Prime firsts	30
Firsts	27
Seconds	19½
Eastern seconds	15
Select pullets	25

Hens, doz	4.00@10.00
Fryers, doz	4.50@5.50
Ducks	4.00@7.00
Broilers	2.50@4.00
Roosters, doz	4.00@9.00
Geese	2.00@2.50
Goslings, pr	2.00@2.25
Pigeons	1.50@2.25
Turkeys	25@28
Squabs	2.00@2.50

Live Stock.

San Francisco prices, gross weight:

Steers	4@5½
Cows and heifers	3@4½
Calves, lb.	5@6¾
Hogs	5@7½
Wethers, No. 1	4@4¼
Milk lambs	5@5¼
Ewes, No. 1	3½@3¾

Potatoes.

Wholesale market quotations:

River, whites, ctl	1.00@1.25
Alamedas	1.50@1.75
Salinas, Burbanks	1.60@1.85
Sweets, ctl	1.75@2.00

Onions.

Yellow, new	70@80
Garlic, new, lb	3@4

Vegetables.

Wholesale quotations:

Asparagus, box	1.00@1.75
Beans, string	1@1½
Beans, wax	1@1½
Limas	1½@2½
Bell peppers, box	75@1.00
Cabbage, ctl	75@85
Carrots	70@75
Cucumbers, box	25@40
Corn, sack	50@1.00
Chili peppers, box	25@40
Celery, crate	1.50@2.50
Egg plant, box	35@50
Cauliflower, doz	50@60
Lettuce, crate	75@2.00
Okra, box	50@75
Peas, sack	1.75@2.00
Hubbard squash, sack	1.00
Summer squash, lug	20@25
Squash, Marrowfat	60@75
Tomatoes, box	25@40
Turnips	60@75

Citrus Fruits.

Valencias	3.25@4.50
Grapefruit	1.50@3.50
Lemons	1.50@5.50
Limes, Mexican	5.50@6.00

Fresh Fruits.

Apricots, crate	65@1.00
Apples, Gravensteins	75@1.60
Cantaloupes, standard	50@75
Cantaloupes, Rivers	80@1.00
Nutmegs, large, crate	35@50
Figs, layer, single	30@80
Grapes, Thompson Seed., crate	40@50
Grapes, blk	40@50
Grapes, Muscat, box	50@65
Pears, box	75@1.40
Peaches, box	50@65
Plums, box	40@60
Prunes, German, box	50@75
Loganberries, chest	4.00@6.00
Blackberries, chest	4.00@5.00
Raspberries, chest	5.00@8.00
Strawberries	3.50@5.00
Pineapples, Hawaiian	2.00@3.50
Bananas	1.00@1.50
Watermelons, doz	1.50@2.25

Dried Fruits.

FRUITS—1911 crop, f. o. b., carload lots, per lb.—Apples, 11@12¼c; Apricots, 15¼@18c; Peaches, 10¼@11½c; Prunes, bulk basis, 5½@6¾c; per lb., 4¾@9c, with a premium of ½@1c on large sizes; Figs, 5@6c for White; Pears, 11@14¼c.

RAISINS—1911 crop: Seeded, per pkg. —Fancy, No. 16, 7¾c; Choice, No. 16, 7½c; Loose Muscatels, in 50-lb. boxes—Standard, 4-crown, 6½@7c; do, 3-crown, 6@6½c; do, 2-crown, 5½@5¾c; Seedless—Muscatel, 5¼@5½c; Sultanas, 6¼@6½c; Thompsons, 7@7¾c.

Nuts.

Walnuts, No. 1 soft shell	16@16½
Walnuts, No. 1 hard shell	14½
Almonds, '10, N P U	16@16½
Almonds, '10, Nonp	18@18¾
Almonds, '10, I X L	16½@17¼
Pecans	14@17
Chestnuts, California	6@8
Peanuts	5@5½

Beans Dried.

Limas	5.40@5.60
Pink	4.35@4.65
Black eyes	5.75@6.00
Small white	3.65@3.80
Large white	3.60@3.70
Kidneys	5.50@5.60
Garbanzos	3.00@3.25
Bayou	3.75@4.00
Horse beans	2.60@2.75
Red Mexicans	5.25@5.40
Cranberry	3.30@3.75

Hops

Hops, coast, 1910	32@35
Hops, 1911 contracts	35@40
Hops, Oregon, 1911	35@40

Honey.

Water white, comb, '11	15@16
Dark comb	12½
Extracted white, '11	8½@9
Extracted dark	6½
Beeswax, lb	24@30

Hay.

Scott, Magner & Miller say:

Arrivals of hay for the six days ending today have been 5500 tons, being a slight increase over last week. It has been surprising that these stupendous amounts of hay have been taken care of so readily. While naturally these heavy accumulations have been difficult to handle, yet they have been quietly absorbed and placed in such a way that the market has remained steady and unchanged. It was usual heretofore under such immense arrivals to see a dull and soft market and a disorganized condition prevail.

The exceedingly heavy arrivals during the last two weeks have been accounted for by the fact that the hay remaining in the fields is being rapidly shipped on purchase account as the farmers are anxious to get the fields cleared up as early as possible, after they have sold their hay. It is not expected that arrivals by the railroads will be as heavy from now on, and that conditions will adjust themselves to a better basis all along the line.

The market on alfalfa can be quoted as unchanged. There has been considerable coming in steadily, and this hay has been going out to fill orders that have been taken to fill up dairy barns for winter use. The yield of alfalfa from the river districts is turning out heavier than was anticipated earlier in the season. There is considerable alfalfa now offering for sale in various sections.

We quote the wholesale prices in round lots on today's market as follows, viz:

Fancy wheat hay	17.00@18.00
No. 1 wheat or wheat & oats	15.50@16.50
No. 2 wheat or wheat & oat	12.00@13.00
Choice tame	14.50@15.50
Other tame oat	10.00@13.00
Wild oats	10.00@12.50
Stock hay	5.50@6.00
Alfalfa	9.00@11.00
Straw, bale	55@60

Grain.

Wheat	1.42½@1.45
Barley, fancy	1.58¾@1.60
Barley, good to choice	1.55@1.57½
Barley, poor to fair	1.50@1.53¾
Corn	1.60@1.62
Oats, red	1.57½@1.70
Rye	1.47½@1.52½
Mustard, brown	5½
Alfalfa seed	18
Millet	3@3½
Flaxseed	5@5½
Broom corn seed, ton	30.00

Feed Stuff

Alfalfa meal	15.00
Bran, ton	28.00@29.00
Feed cornmeal, ton	38.00@39.00
Cracked corn	38.06@39.00
Rolled barley, ton	33.00@34.50
Rolled oats, ton	31.00@32.00
Middlings	32.00@34.00
Oil cake meal	42.50@43.50
Cocoanut cake, ton	24.00@25.00
Mixed feed, ton	25.00@27.00
Shorts	29.00@30.00

Citrus Fruit Market

LOS ANGELES, Sept. 13, 1911.

There are probably less than 1000 cars of Valencias yet to go. The earlier estimates are being materially reduced by the small sized fruit. The heavy crop has prevented sizing up and this has thrown into auction markets full cars of small offs, which accounts for many of the low quotations given. Owing to a shortage of local fruits in many Eastern markets oranges have commanded fair returns and with regular sizes some excellent prices have been received.

Foreign lemons are still in light receipt and a material increase in demand for Californias is noted. Prices are good.

Shipments.

Shipments of oranges to date since November 1, 1910, 35,792 cars, lemons 6,271, total 42,063. To same date last season: Oranges 24,603, lemons 4,490, total 29,093.

NEW YORK, Sept. 12.—Nine cars Valencias and one car of lemons sold. Market easier on Valencias, lower on lemons. Fair.

VALENCIAS—	Avge.
Titus Ranch, fy, San Marino G. P. A.	$3.75
El Toreador, sd, San Marino G.P.A.	2.80
Pilgrim, Stewart Ft. Co.	4.10
Lady Rowena, Chapman	3.20
Old Mission, Chapman	4.55
Golden Eagle, sd, Chapman	3.80
Twin Peaks, Growers Ft. Co.	4.10
White Cross, Growers Ft. Co.	3.50
Sceptre, S. S. Ex.	4.70
Rooster, S. S. Ex.	3.90
Moose, O. K. Ex.	4.20
Prong Horn, O. K. Ex.	3.00
Buck, O. W. Ex.	2.30
Red C, Covina Ex.	2.90
Cougar, Covina Ex.	2.30
Glendora Heights xf, A.C.G. Ex.	3.30
Evolution, A. C. G. Ex.	2.65
Red C, Covina Ex.	3.10
Cougar, Covina Ex.	2.30
Golden Orchard, Ind. Ft. Co.	3.35
Freedom, Ind. Ft. Co.	2.35
LEMONS—	
Loma	$4.50

BOSTON, Sept. 12.—One car sold. Cloudy, muggy. Market is unchanged on lemons.

LEMONS—	Avge.
Marguerita, xc, Earl Ft. Co.	$1.50

NEW YORK, Sept. 11.—Fourteen cars Valencias, one car lemons sold. Market steady on oranges. Market considerably higher on lemons. Fair.

VALENCIAS—	Avge.
Corona, National O. Co.	$3.65
Corona Stds, National O. Co.	2.80
Old Mission, fy, Chapman	6.45
Old Mission, ch, Chapman	5.25
Golden Eagle, sd, Chapman	3.90
Old Mission, fy, Chapman	6.55
Old Mission, ch, Chapman	5.15
Golden Eagle, sd, Chapman	3.90
Lady Rowena, Chapman	3.30
Golden Orchard, or, Ind. Ft. Co.	3.00
Stag, A. C. G. Ex.	4.85
Pointer, A. C. G. Ex.	2.45
Hunter, A. C. G. Ex.	1.70
Whittier, S. T. Ex.	4.25
Glendora Hgts., fy, A. C. G. Ex.	4.80
Glendora Hgts., ch, A. C. G. Ex.	3.55
Evolution, A. C. G. Ex.	2.60
Red C, Covina Ex.	3.00
Cougar, Covina Ex.	2.65
Red C, Covina Ex.	3.40
El Azar, A. C. G. Ex.	2.40
Red C, Covina Ex.	3.00
Cougar, Covina Ex.	2.45
Purity, S. S. Ex.	2.60
Big R, S. S. Ex.	2.25
Lincoln, A. H. Ex.	1.95
Navajo, A. H. Ex.	1.90
Titus Ranch, fy, San Marino	3.80
El Toreador, sd, San Marino	2.75
Sorrento	2.60
Plain	1.90
LEMONS—	
Loma	$4.70

PITTSBURGH, Sept. 11.—Four cars sold. Market steady on oranges and lemons.

VALENCIAS—	Avge.
Naralimo, or, Sparr Ft. Co.	$3.95
Pointer, A. C. G., Latin Station	2.25
Paul Neyron, S. A. Ex.	3.05
Circus, xc, Sparr Ft. Co.	3.40
Hunter, A. C. G., Latin Station	1.85

Cream Separators, all sizes and prices. Guy F. Kelsey & Co., 106 East Eighth St., Los Angeles, Cal.

LEMONS—
As You Like It, L. G., F. G. A.....$2.60
Growers, L. G., F. G. A..... 1.80

ST. LOUIS, Sept. 11.—Warm; cloudy. Market weak on Valencias, steady on lemons. Three cars sold.

VALENCIAS—	Avge.
Searchlight, S. S. Orange	$3.45
Plain Ends, S. S. El Modena	3.30
Goldfinch, S. S. El Modena	2.65
S. S. Brand, S. S. El Modena	3.10
Transcontinental, S. S. El Modena	2.85
El Modena, S. S. El Modena	2.55
LEMONS—	
Bridal Veil, V. C. Limoneira	$3.70
White Cross, V. C. Limoneira	3.40

BOSTON, Sept. 11.—Six cars sold. Cloudy. Market unchanged.

VALENCIAS—	Avge.
Carmencita, S. T. Placentia	$4.10
Stag, A. C. G., Charter Oak	4.95
Hunter, A. C. G., Charter Oak	2.40
Robusta, A. H. Ex	3.15
Palm Tree, A. H. Ex	1.95
Hobo C, A. H. Ex	2.60
Orchard, or, National O. Co	4.75
Golden Orchard, Ind. Ft. Co	3.30
Colombo, S. T., Placentia	3.35
Alta Cresta, A. H. Ex	4.90
Robusta C, A. H. Ex	3.80
Hobo, A. H. Ex	2.20
Peasant, A. H. Ex	2.95
Standard, sd, National O.	3.90
Freedom, Ind. Ft. Co	2.30
LEMONS—	
Mission, S. T., Santa Barbara	$2.85
Blondina, S. T., Santa Barbara	1.75
Festival, S. T., Santa Barbara	2.50

PHILADELPHIA, Sept. 11.—Five cars oranges, one lemons sold.

VALENCIAS—	Avge.
Stag, A. C. G., Glendora	$4.85
Hunter, A. C. G., Glendora	2.10
Carnival, S. T., Anaheim	3.40
Pointer, A. C. G., Glendora	3.05
Golden Pheasant, xc, Ind. Ft. Co	3.55
Pointer, A. C. G., Glendora	2.80
Mother Colony, S. T., Anaheim	4.05
Stag, A. C. G., Glendora	4.80
Hunter, A. C. G., Glendora	2.10
Bisch Garden	2.65
LEMONS—	
Euclid, Growers Ft. Co	$4.20
Plain	1.55
Flower, Growers Ft. Co	3.25

CINCINNATI, Sept. 11.—Warm. Market steady on oranges, advancing on lemons. One car oranges, one lemons sold.

VALENCIAS—	Avge.
Pico, S. T., Whittier	$2.40
LEMONS—	
Quaker Girl, S. T., Whittier	$4.55
Pet, S. A. Ex	4.25
Greenleaf, S. T., Whittier	3.90
Greyhound, S. A. Ex	3.75

CLEVELAND, Sept. 11.—One car lemons sold. Market higher. Warm, pleasant.

LEMONS—	
Pet, S. A. Ex	$4.35
Greyhound, S. A. Ex	3.20

TWENTY MILLION LAKES.

A writer in Missouri is urging the necessity of irrigation and uses the present season of drouth over the entire East to give emphasis to the need in all the humid part of this country for preparation for irrigation. He uses as his slogan, "Twenty Million Lakes for Three Hundred Million People." He would conserve water in ponds and reservoirs during flood time so that it may be used in periods of just such drouth as has made the East suffer this year. The building of this immense number of reservoirs is decidedly fanciful, but there is a lesson in it. Irrigation is marching on apace even in the humid East.

One of the news notes from Southern California of the issue of Aug. 24 located the Irvine Ranch in Los Angeles County. This was purest oversight, as this great ranch is well known to be in the southern part of Orange County. The item referred to contract being let for a sugar factory on the Irvine Ranch which will increase to five the number in rich little Orange County.

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Ideals are like stars; you will not succeed in touching them with your hands, but, like the seafaring man on the desert of waters, you choose them as your guides, and, following them, you reach your destiny.—Carl Schurz.

Do your cows milk hard? Send 50 cents for teat expander. O. J. Weber Co., 225-227-229-231 East Sixth St., Los Angeles, Cal.

CALIFORNIA WILD FLOWERS.

(Continued from Page 225.)

immense size. This and the former species are the most desirable when large specimen trees are desired.

Quercus Engelmanni is to be found in many localities. It is a medium sized spreading tree with light-colored, rather smooth bark. The leaves are variable in shape, sometimes entire and sometimes with deep coarse teeth.

The Scrub Oak (Quercus dumosa) is common in the chaparral belt of our mountains. It is very variable in character and specimens are to be seen in the same location with many variations both in shape and size of the leaves and also the acorns.

A species found plentifully in Chatsworth Park and San Fernando is the Quercus lobata (Valley Oak or California White Oak) as it is sometimes called. This is a deciduous species. It forms a large, stately tree. The leaves are pale green and deeply lobed, very much like those of the English Oak. Many people have the idea that our oaks are so slow growing that it is not worth while to cultivate them. This is a mistake, for when grown under favorable conditions a Live Oak will grow as fast as many of the exotic trees which we now plant in our gardens. I have known trees which were three feet high in one year from the time when the acorns were planted, and seven feet high at the end of the second year. The most important thing in growing oaks is to give plenty of water and never let them get dry, as this checks the growth.

The California Laurel or Bay (Umbellularia Californica) is a handsome tree with shining dark green lanceolate leaves. This tree is easily propagated from seed, and could be used to advantage either for single specimens or as a street tree.

There are few trees in cultivation which for beauty surpass the Catalina Cherry (Prunus integrifolia). This tree is to be found in Cherry Valley and in many precipitous canyons on the Island of Catalina. While exploring a canyon on the island a few years ago I found large numbers of these trees growing among the rocks in places which were almost inaccessible. The leaves are large, oval, and of a rich glossy green. The fruit is dark red, has a rich flavor, but is nearly all pit, so is practically useless. This tree has been cultivated to some extent, but not generally. In its native habitat it varies considerably in shape, but under cultivation, if well watered and properly pruned when young, it makes a tree of perfect shape and is an ideal tree for street planting.

The Arbutus Menziesii (Madrone) is a handsome tree with pretty foliage and deep red bark, and is well worthy of a place in our gardens.

In Coniferous trees, the Monterey Pine (Pinus radiata or P. insignis as known to nurserymen) and the Monterey Cypress (Cupressus macrocarpa) are both so extensively grown and so familiar to everyone that they need no further mention here.

The Torrey Pine (Pinus Torreyana), which grows on the bluffs at Del Mar, in San Diego County, is a rather small tree, with spreading branches and dark brownish bark; the needles are long and five in a cluster. This tree succeeds well under cultivation, and forms a handsome tree.

A pine to be found in Antelope Valley and from there northwards is the Digger or Silver Pine (Pinus Sabiniana). It is not a large tree; the needles are light green or glaucous, three in a cluster and drooping. It succeeds well under cultivation, and forms a handsome tree.

Another pine which must not be forgotten, as it is one of the finest of our native trees, is Pinus Coulteri (Coulter's or Big Cone Pine), as it is often called, having the largest cone of all trees. It is a medium sized tree with thick, rough bark; the needles are in clusters of three, stiff and erect and of a dark blue-green color. It grows in the San Jacinto and San Bernardino Mountains, at an elevation of from 4,500 to 7,000 feet, but, unlike most of our native pines from high altitudes, it succeeds well when cultivated in our valleys, and a few fine specimens are to be seen in Pasadena and other places. There are a great many of our pines which are magnificent trees in their native habitats in the mountains, but which will not succeed when transported to the valleys and lowlands. The three species mentioned here are probably the most desirable native pines for cultivation. The Monterey Pine, which is so largely grown on account of its rapid growth, is really the least desirable, as it is a short lived tree. The other species mentioned, though slower growing, are long lived trees, and for beauty far surpass the Monterey.

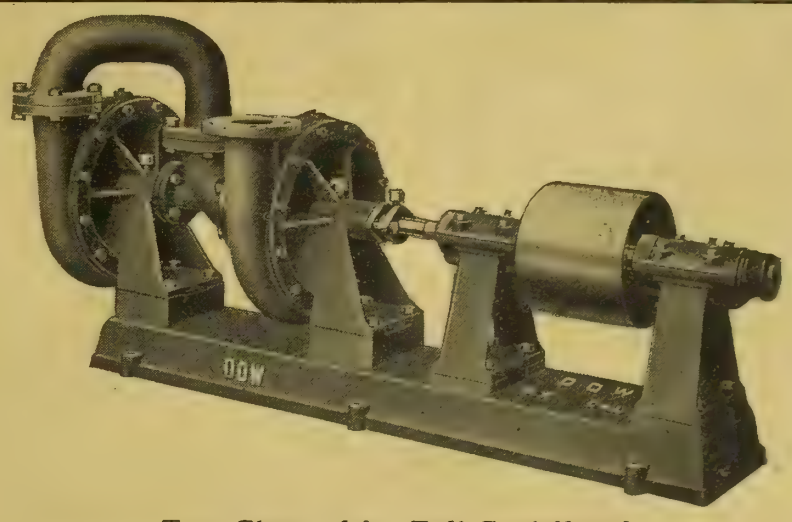
A most beautiful tree found in our mountains is the Libocedrus decurrens (Incense Cedar). It is not a very large tree as a rule, but occasionally immense trees are to be found. It has bright cinnamon-red bark and pale green foliage. This tree succeeds well under cultivation.

All the trees thus far mentioned in this paper, with the exception of one oak, are evergreen. Here in California the idea seems to prevail that all our cultivated trees must be evergreen, and we lose sight of many beautiful trees because they are deciduous. While evergreen trees are desirable in a general way, if we have nothing else, and we see them continually year after year, they become very monotonous. We miss the soft, delicate greens of the deciduous trees which are so restful to the eyes during the hot summer days and are such a contrast to the heavy, somber colors of the evergreens. We also miss the autumn tints, the beautiful browns and yellows and reds which tell us of the fall of the year. There are, no doubt, many deciduous trees that could be used to great advantage in certain situations.

The Sycamore (Platanus racemosa) is familiar to everyone. With its old, gnarled roots and grotesque forms, it is the most picturesque tree of a California landscape. To appreciate this tree one should visit the Sycamore Grove Park, between Los Angeles and Pasadena, where a park has been laid out under the shade of these fine old trees planted there by nature herself. The Sycamore does well under cultivation and grows rapidly.

Another beautiful deciduous tree found in the canyons of our mountains, at an elevation of 3,000 to 6,000 feet, is the California Maple (Acer macrophyllum). It grows into a tall tree; has rough furrowed bark and large leaves.

The wild walnut (Juglans Californica) is common in many of our foothills. It varies considerably in its nature, sometimes being but a mere shrub, and in other localities forming a large, spreading tree. The Cottonwood (Populus trichocarpa), the Alder (Alnus rhombifolia) and a great many other deciduous trees are worthy of cultivation, but time will not permit of their mention here.



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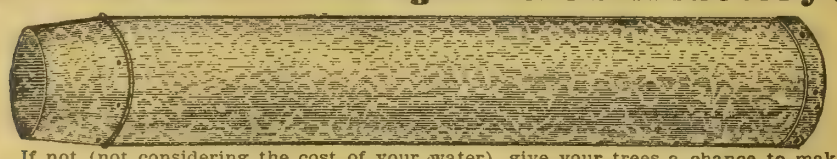

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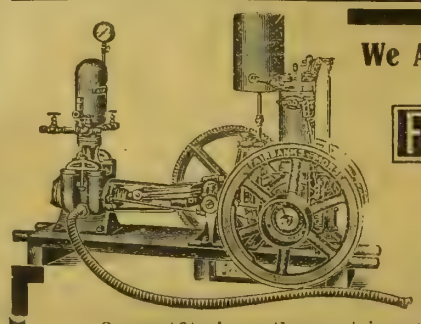

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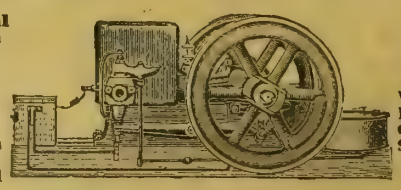

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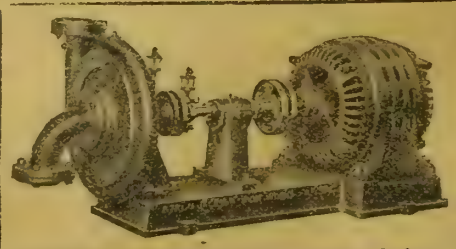

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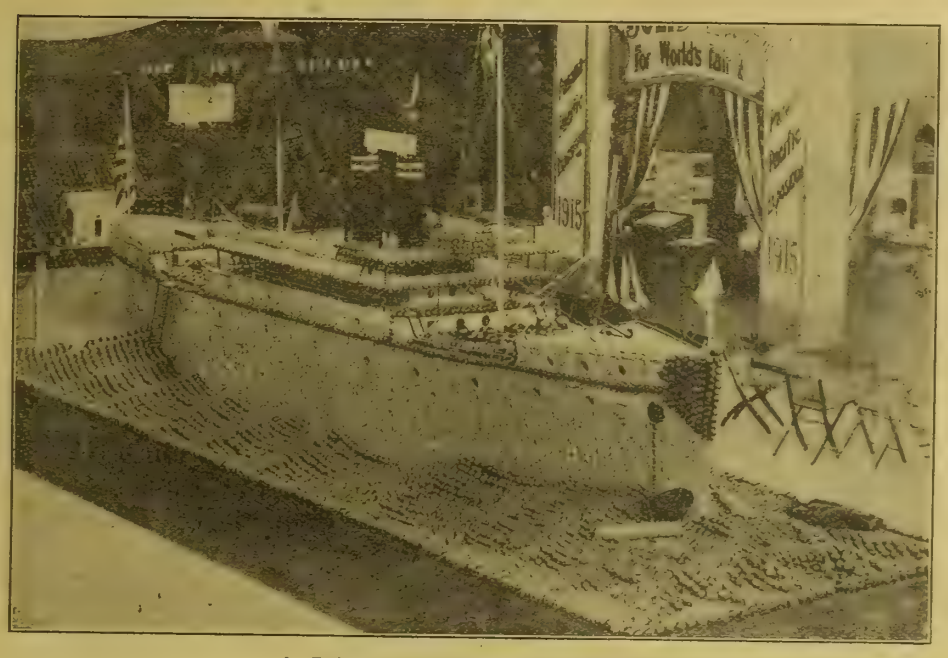
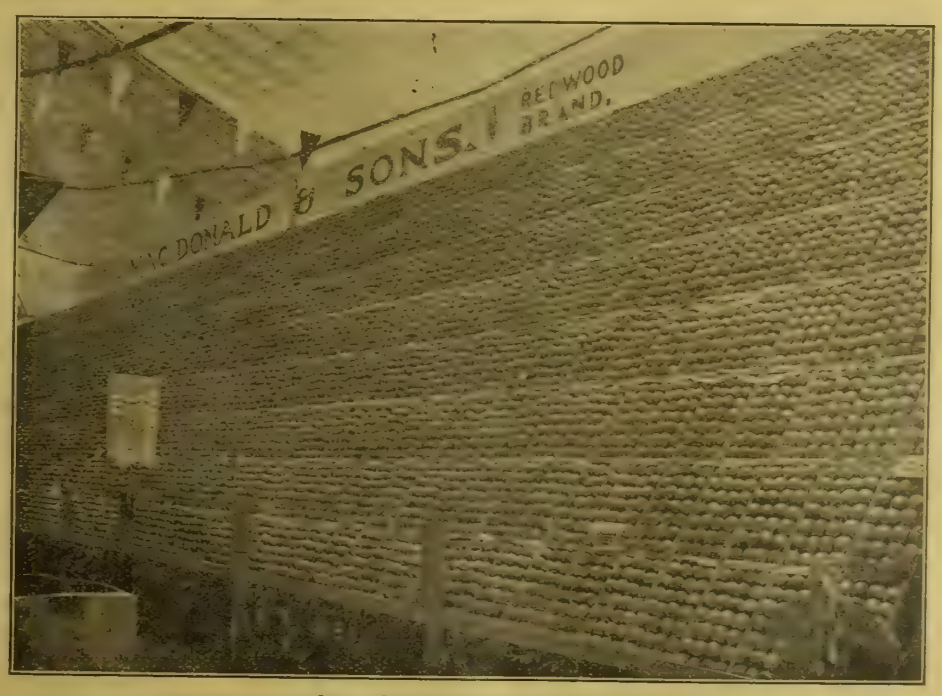
Scenes in the Watsonville Apple Show, 1910

Preparations are Making for Fine Exhibits and a Greater Show Than Ever This Year



A Prize Winning Feature Exhibit



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Vol. XXXVII. No. 12. LOS ANGELES: THURSDAY, SEPTEMBER 21, 1911 One Dollar the Year

Welcoming the Swiss Milch Goat to California

Written Especially for the Cultivator by Winthrop Howland, Redlands, Member Board of Directors American Milch Goat Record Association

Some ten years ago while at San Blazien, a small mountain village in the German Schwartzwald, near the Swiss border, my attention was attracted by some very handsome and unusual appearing milch goats of Swiss strain. Much more like deer in appearance were these goats than any I had ever seen before, and their great size and high-bred bearing made upon me a lasting impression.

Here in this out-of-the-way hamlet, for the first time I saw milch goats that would draw the attention of any enthusiast of fine dairy stock, and nowhere in the United States (my native land) had I ever seen or heard of such superior animals.

When about 1905 I came to settle in California, it occurred to me that in this climate where conditions are such that dairying is carried on successfully only when ample facilities for irrigation are at hand, why are not milch goats the proper creature for this section, instead of cows? Here was the situation: cows have no natural pasture in this semi-arid region during many months of the year, whereas were goats kept, the dry weeds and sparse grasses in the chaparral could be put to use and made of great economic value. But if my reasoning was sound, why were not milch goats generally bred hereabouts, and if one wished to establish a herd where might be obtained foundation stock of some superior strain?

The first question was answered by making a tour of inquiry in the neighborhood of Los Angeles, and it was rather surprising to learn how many "nannies," as they were called, were kept by individual families of moderate means as a source of milk supply. In many a backyard and on vacant lots I found nondescript does staked or in little corrals, and a few minutes conversation with the owners would prove how highly the milk of these does was valued, and how economically they were kept. Most of these goats were either part Angora, or so-called Cashmere, or from the wild bands of Catalina Island, where they had been caught as kids and brought to the mainland. My observations were convincing that there was a large demand for good milch goats, but where to obtain the valuable Swiss strains was another matter. After some interesting correspondence with the United States Bureau of Animal Industry and a careful study of their Bulletin on the milch goat, I determined to engage in the industry, and through the bureau was so fortunate as to locate a small herd of recently imported Swiss Toggenburgs owned by a gentleman near San Diego, California. These goats, an unusually fine thoroughbred registered buck, Prince Bismarck No. 159, and four thoroughbred registered does we secured, and these were the foundation of what is now the largest herd of thoroughbred Toggenburgs in the United States. We later secured other imported Toggenburgs from breeders in Illinois, Massachusetts and Northern California, adding some splendid stock to our herd, and from a Basque sheep breeder near Alhambra, California, we bought a number of hornless, part Spanish does, to cross with our imported Toggenburg stud, and at considerable trouble we more recently have had caught for us a band of wild Catalina does and shipped from the island to our ranch near Redlands. Some of the grade Toggenburg does, especially the second cross, show in a marked degree the fine qualities of the Swiss blood, and we are as rapidly as possible breeding up a most satisfactory type of grade.

Of the three breeds of Swiss goats at present in this country, Toggenburg, Saanen and Schwartzenburg, the Toggenburgs are the more numerous and by far the handsomest, as well as fully equalling or excelling the other breeds in milk production. The Toggenburg is to the goat family what the Jersey cow is to her kind,—the aristocrat of the race,—and not only are they remarkable as milkers but also they are most attractive and intelligent creatures, kindly and responsive in disposition and soon forming a strong attachment for those in whose care they may be. In Switzerland the Toggenburgs have been carefully bred for a hundred years or more, and the breed most intelligently

Toggenburg Does in Alfalfa Field at Rancho El Chivar. Note High-bred Deer-like Appearance of Does.

improved. In color they vary from light to a dark brown on the body, with white bars down each side of the face, and white from the knees and hocks down. Their coats also vary in length, some having short and others fairly long coats, but the hair in either case is thick and fine, and the race markings very distinct. Their heads are finely shaped and their long delicate and erect ears give them much the appearance of deer. Though a hornless breed, occasionally a kid is born with horns.

The milk of goats is far superior to that of cows, being richer in butterfat, the particles of which are much more minute than in cow's milk, and consequently more easily digested. For young children and invalids it is especially to be recommended, the more so as the goat is practically immune from the taint of tuberculosis. The following is a report by Dr. Barbellion of Paris at the International Congress of Medicine, on the digestibility of different kinds of milk:

"According to the reports which he has made it was ascertained that (1) The curd of cow's milk forms a dense adhering mass, which by agitation, separates into clots that are but slightly soluble. The curd of goat's milk, on the other hand, forms into very small light flakes which are soft, very pliable and very soluble, like those in human milk; (2) The curd in both human milk and that of the goat, after agitation, is precipitated very slowly and incompletely, while the curd of cow's milk is precipitated very rapidly and very completely; (3) Submitted to the action of digestive ferments, human milk and the milk of the goat were digested completely in twenty hours, while the same process applied to cow's milk showed only a very slight advance after sixty hours; (4) The milk of the goat approximates more in its composition and digestibility to human milk than that of any other animal."

Says Dr. Demade, director of the sanatorium at Haelbert, Belgium:

"Among the 300,000 goats of Belgium, there is probably not one afflicted with tuberculosis. Goat's milk being wholesome and beyond suspicion, there is no need to sterilize it. It may be taken raw, still palpitating with those mysterious forces which constitute life. D'Escherisch, who has studied comparatively fresh milk and sterilized milk, has shown that milk is not merely a nutritive liquid, but that it is clear that children that are delicate have need of the ferments contained in raw milk, and are quite incapable of digesting milk rendered inert by sterilization."

As the interest in goat keeping rapidly grows, I am frequently requested for information as to the yield of milk, method of feeding and general supervision of milch goats, and the following advice may be of assistance to those readers of the Cultivator who are beginners in the business.

Never breed a young doe under sixteen months of age, and eighteen or twenty months is better yet. Goats are such precocious creatures that they will sometimes breed as young as seven months, but by breeding too young the size and milk yield of the dam are permanently ruined, as does do not attain full growth until they are at least three years old.

The period of gestation is on the average 150 days, and usually after the first kidding twins are dropped.

Goats, like deer, have a rutting season, beginning in this climate in July or August, and lasting as a rule till March and sometimes, in rare instances, until later in the year.

In Southern California we consider September, October and November the best months in which to breed, as then the kids are dropped when the green feed is at its prime. Many breeders make the mistake of weaning kids too young. In order to insure size and vigor, kids should not be fully weaned until they are five months old, and then they need a little grain, oats or rolled barley, not more than one-half pint twice daily, and well cured alfalfa hay.

By far the best feed for stall fed goats is a small feed of grain morning and night, all the alfalfa hay they want, and such tree cuttings, weeds and fresh vegetables as may be obtainable from time to time, for a change of food is esesntial.

Oat hay may be fed occasionally, but not too often, as it is binding, and on account of the beards barley should never be fed, sore mouths resulting from its use. To avoid waste, hay should be placed in a feed rack having slats across the top. A lump of rock salt should always be where the goats may lick it at will, and clean, fresh water for them to drink. The most scrupulous cleanliness must be observed in all food given them, otherwise they will refuse to eat when hungry, and trampled hay they will not touch.

Contrary to popular opinion, goats are probably the most dainty of animals in their natural choice of clean food, and only when starved and ill used will they resort to such leavings as may be thrown to them.

Goats ranging free at pasture thrive splendidly on the natural growth of weeds and brush, and require little or no extra feeding except in cases of very old individuals or kids recently weaned, when it is best to grain moderately.

Every once in about six weeks it is necessary to trim the hoofs of stall fed goats, as, lacking the opportunity to range, their hoofs overgrow and turn under, and if neglected in time become deformed. It is a very simple matter to trim the outer hard edge of the overgrown hoof with a strong knife, and should never be too long neglected.

A common and distressing sight are the overgrown feet of many of the cows of this section which are never trimmed and grow to such length as to be unsightly deformities that must cause the poor creatures great discomfort. As a goat's foot is much easier to trim than that of a cow, there is no excuse whatever in permitting any overgrowth.

In order to milk a doe to best advantage she should be taught to jump upon a milking stand. This stand is sixteen inches high from the ground and fitted with a stanchion, and the work of milking is rendered extremely easy by the use of such an apparatus. To teach a doe to jump on the stand, feed a little grain while milking, and she will soon learn to anticipate this and willingly take her place at the proper time.

Here let me speak a word for kindly treatment towards goats kept in small enclosures. In the first place it is an absolute cruelty to keep but one doe, for goats are creatures of especially gregarious natures and will mourn and fret very considerably if kept alone, whereas two or more will thrive together contentedly.

A provision essential to their needs is something upon which they may jump and play—a good sized box answering their purpose if nothing better can be procured. In their natural wild state they are much given to climbing and jumping from considerable heights, and in order to keep them in healthful condition some provision for such exercise should be provided. If goats are tethered, see that the rope or chain is not unduly heavy, that a wide, comfortable collar is fitted not too tight, and, most important, that a swivel is attached to the tether, otherwise there is serious danger of choking.

Remember that shade is as accept-

(Continued on Page 272.)

Citrus Trees Exclusively

Now is the best time to place your order for spring planting. Get same in while the first-class stock is available and avoid being disappointed later on.

Write Us Today

Our booklet, "CITRUS FRUITS," mailed to any address on receipt of 25c.

San Dimas Citrus Nurseries

San Dimas, Cal.

THE BEST IN THE WORLD; HAS NO EQUAL

The Original R. I. Knapp Side-Hill Plow

Orchard and Vineyard Plow received first premium at State Fair.

If you cannot get our plow send us the name of your dealer and we will see that you are supplied. Has given entire satisfaction for over thirty years. Equally as good for valley as hill sides. We manufacture five sizes—from one-horse orchard and vineyard plow, to the strongest grading plow.

SAN JOSE, CALIFORNIA **H. G. KNAPP & SON**

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The Roessler & Hasslacher Chemical Co.

100 Williams Street, New York. Works: Perth Amboy, N. J.

CYANIDE of POTASSIUM 98-99%, CYANIDE SODIUM,

Equivalent to 128-129% Cyanide Potassium, for generating Hydrocyanic Gas

The only positive eradicator of the **San Jose Scale, Red** and **Black Scale** and other insect pests.

FOR SALE BY

The Braun Corporation, 363-71 New High St., Los Angeles, Cal.
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Good Citrus Trees

Superior grown large size trees, up to size now, for immediate or next season delivery. Also sweet and sour seedbed stock for now or next spring.

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Growers of Citrus Trees exclusively

PHONE HOME 3222 — 3 0 S. Marengo Ave., Alhambra, Cal.

HIGH GRADE CITRUS TREES

Twenty years of experience enables us to furnish the best possible.
Write, phone, or call for information. We are here for Business.

POLLARD BROS.

Alhambra, Main 13, or Black 183 — Corner Mission Street and Los Robles Ave. — South Pasadena, Calif.

NITRATE OF SODA

We are prepared to furnish Nitrate of Soda at the lowest market price, and will be pleased to quote prices and furnish literature to any one interested, on application. Advise us what crops you are interested in.

NITRATE AGENCIES COMPANY

W. S. SPARR, Agent. 321 Stimson Block, Los Angeles.

Citrus and Tropical Fruits

SELLING FRUIT BY CO-OPERATIVE ASSOCIATIONS.

By G. Harold Powell.

The co-operative associations sell the fruit in a variety of ways, the method of sale depending on the character and condition of the industry and the practices that have grown up around it. A large proportion of the deciduous summer fruits is sold f.o.b. cars at the point of production, subject to inspection on arrival in market, or for cash f.o.b. cars, or at auction. Some are consigned to commission merchants. From 25 to 30 per cent of the citrus fruits of California are sold at public auction in the eastern and central-western markets, and a large proportion of the western deciduous fruits is sold in this manner. Among the apple associations it is a common practice to send to the trade in advance of the harvest a catalogue of the probable number of boxes of the different varieties and sizes of the higher grades of fruit that the association has for sale, and finally to sell the fruit to the highest f.o.b. bidder. The lower grades are consigned to commission firms, are sold for cash, or are marketed in other ways.

Few of the organizations, except those that transact a large business—like the citrus fruit growers of Florida and California, the peach shippers of Georgia, and the deciduous fruit shippers of California—have attempted to regulate the distribution of their products throughout the country, nor have any serious attempts been made to carry the distribution beyond the wholesale dealer, the broker, or the auction companies. The co-operative method has brought about large economies in the purchase of supplies, in the cost of preparing the fruit for shipment, and in the charges for distribution and sale. It has improved the methods of fruit packing and grading enormously. It has sometimes doubled the net returns to the individual grower for his product. The difference in the price that the association receives for the fruit and that which the consumer pays is often 100 per cent or more higher than the original selling price, and this contracts consumption.

As long as the country is prosperous and the present method of distribution and sale does not cause a disastrous oversupply in the principal markets, the growers will be satisfied to continue the methods now in operation. But as the fruit business increases it will be necessary for the growers' associations to develop methods for increasing consumption. This will be accomplished by a more general distribution of their products, by the development of their associations into marketing organizations, by equalizing the distribution of the fruit over a longer period through a greater use of cold storage warehouses, by stimulating a greater interest in fruit consumption through systematic advertising, and by placing the fruit in the consumers' hands at a cost nearer that which the producer himself receives. As the American fruit business increases, the grower may be expected to bring about as great an improvement in the methods of distributing and selling his products to the consumer as he has already accomplished in the handling, grading, packing and preparation of the fruit for market.

AVOCADOS.

Mr. Frank Frost of Success, Tulare County, is anxious for information as to avocado or alligator pears. He has a few hundred small seedlings started and as he is in an almost entirely frostless section, wishes to plant as extensively as is wise. He wishes to know as to best soil conditions and as to whether they will stand with roots in decidedly moist soil; what is the best time for budding? Seedlings are now about a foot high.

The avocado is a new fruit to horticulturists and very definite information cannot be given. Seedlings are unsatisfactory; a few bear good fruit, while many do not bear at all. Therefore budding is necessary. Nurserymen are now experimenting with budding, endeavoring to find best methods. The ring or the patch bud has shown best results, but even with them the percentage of successful buds is very low. Some nurserymen have succeeded best with the ring bud, the bud wood having been forced to ripen buds before cutting from the tree by cutting off a part of the leaf. A little later after a partial recovery from this mutilation the remainder of the leaf is cut off, leaving a part of the stem. This will drop off when the wood is fully ripened, and then the scion may be cut off and the buds used.

As to period of the year, spring time is doubtless the best, but this is a question upon which more definite information can be given later.

Soil and climatic requirements are very similar to those of the orange. If anything, the avocado will stand less frost and is more sensitive to the heat than is the orange. It is supposed that the warmer coast sections offer most favorable location, though it is probable that varieties will be developed which will do well under valley conditions. The soil must be warm and fairly well drained.

ADVERTISING US.

In suggestion for advertising Florida oranges contributed to the Florida Grower we note in almost every paragraph comparison with "California Navels." The suggestions are to the citrus exchange of that state and we doubt its acceptance. We bring up the point to prove the old-time assertion that "Comparisons are odious." Further, the fact that a possible competitor is worthy of being mentioned seven times in a few short paragraphs is high tribute. But worse than all is the fact, and it is generally granted, that when a competitor attempts to depreciate another he does it so that too much attention may not be centered on his own product. But here are the suggestions:

"I would suggest that a series of cards on good bank paper be printed for wide distribution among all retailers who sell Florida oranges. I am listing below some suggestions for cards that might prove suitable:

"Florida oranges contain 41 per cent more juice than California navels. The juice contains the only nutriment in the orange. A box of Florida oranges is 15 per cent larger than the standard California box. Moral: Buy Florida oranges. Buy the box and get practically twice as much juice for the same money. Ask your dealer for Orangeade recipe.

"A standard box of California navels weighs about 72 pounds and contains about three gallons of juice. A standard box of Florida oranges weighs about 85 to 100 pounds and contains from 4¼ to 5 gallons of juice. Insist on Florida oranges. Get full value for your money. Nine Florida oranges are equivalent to about a dozen California oranges.

"A California navel may look prettier, but beauty is only skin deep. For the best flavor and nutriment buy Florida oranges and get 41 per cent more juice and a 15 per cent larger box. The juice is the only nutritive part of the orange.

"The Florida orange contains 41 per cent more juice than the California navel. Only the juice contains any food value. The best way to eat an orange is to drink the juice.

"Ask for the Florida orange, which contains 41 per cent more juice than the California navel—not to mention the better flavor of the Florida product."

Doctor F. H. Newell, to whom the success of the reclamation service is due in a large measure, states that over 1,000,000 acres have been reclaimed and 14,000 families are receiving water from works built or controlled by the government under the terms of the reclamation act.

Chicago potatoes are selling at 75 cents a peck, and many people decided to leave potatoes off the menu for a while; as a result of this the incoming supply accumulated until wholesalers were forced to cut prices some, in order to get rid of the overstock.

Every Orange Grower in California

and every other user of

FUMIGATION CYANIDE

should be well advised before purchasing his supply.

The best authorities unanimously agree that for the effectual generation of Hydrocyanic acid gas, a Cyanide should not contain in excess of 1 per cent of Chloride of Sodium (common salt). A higher percentage of the ingredient materially reduces the available amount of gas by the process of decomposition.

BEWARE OF ADULTERATED CYANIDES!

Inferior and so-called Cyanide of Potassium is sometimes offered the uninformed at a price below the market.

In nearly every instance it proves to be nothing more than a low-grade sodium cyanide carrying from 7% to 15% Sodium Chloride—such cyanide bears no manufacturer's brand or label.

Best Fumigation Cyanide is Cheapest

The best fumigation cyanides do not contain over one per cent Sodium Chloride.

Cyanides sold for less than the market price generally contain from 7% to 15% sodium chloride, which is a dangerous element and robs your cyanide of its true efficiency. Furthermore, an extreme sodium chloride content causes twice the percentage of its own inaction.

Facts Orange Growers Should Know

That the only eradicator of San Jose Scale and other insect pests is in the use of a fumigation from Hydrocyanic Acid gas, generated from cyanide of Potassium 98-99% or Cyanide of Sodium 128-130%.

That it is endorsed by Agricultural Experiment Stations.

That it is worth your while to know the sodium chloride content of the cyanide you purchase and if in doubt have a reputable chemist furnish an analysis.

Only One Eradicator of San Jose Scale

Fumigation from Hydrocyanic Acid Gas generated from

Cyanide of Potassium 98 99%

or Cyanide of Sodium 128 130%

the only positive eradicator of San Jose Scale and other insect pests affecting citrus and deciduous trees.

ENDORSED BY AGRICULTURAL EXPERIMENT STATIONS

AND IS THE

Kind of Cyanide to Use

The Roessler & Hasslacher Chemical Company's Guaranteed Cyanide of Potassium (98-99 per cent) and High Test (128-130 per cent) Cyanide of Sodium are manufactured expressly for fumigating and contain no reactionary chemicals. The manufacturers of this material have studied the requirements necessary to produce definite and dependable results.

IT GENERATES QUICKLY, affording the required degree of density of gas under the tent.

CONTAINS NO CHLORIDE OF SODIUM, insuring the highest efficiency and maximum evolution of Hydrocyanic acid gas.

F. W. BRAUN

363-371 New High Street, Los Angeles, Cal.

DISTRIBUTING AGENT FOR

The Roessler & Hasslacher Chem. Co.'s Special Fumigating Cyanides

Packed Only in 200 Pound Cases

Growers Should Co-operate

Through recent investigation it has been proven that a considerable amount of low grade sodium cyanide is on the market. It is probable that some concerted action may be taken by the growers to protect themselves in the purchase of this inferior quality. Analysis by local chemists shows some of the cyanide to contain as high as 15% Sodium Chloride.

Prof. R. S. Woglum contends that a fumigation cyanide containing in excess of one per cent of sodium chloride is unfit for use.

What Salt does to Cyanide

Sodium Chloride, or common salt in Cyanide causes twice the percentage of its own inaction, thereby greatly reducing the efficiency of your fumigating Cyanide.

That an unusual amount of "salted" or diluted cyanide is now on the market has been proven.

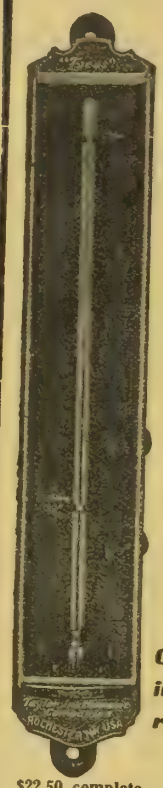
If you have reason to doubt the quality of the next cyanide you purchase, you should insist upon an analysis. Its true chemical content is vitally important and should not show over one per cent of sodium chloride.

Bolton Orchard Heaters

The Pioneer—Without a Peer

Indorsed by the California Fruit Growers Exchange

SEND FOR OUR FULL CROP PROPOSITION



$22.50 complete

Triumph Season
For Bolton Orchard Heaters

Saved the Crops in

California Ohio
Oregon N. Mexico
Texas Washington
Missouri Nebraska
Australia

Orders must be placed immediately. The railroads may have a strike

1 gallon size 20 cents each
2 " " 26 " "

DELIVERED

The Frost Prevention Co.

107 So. Broadway
Los Angeles

Bank of Italy Building
San Francisco

F. H. Hammer Manager

To the Water Well Owners and Drillers of Southern California

We beg to introduce ourselves and ask for a chance to prove worthy of your permanent confidence and patronage.

We have found that with some additions, the complete line of oil well supplies which we carry at Los Angeles and in our branch stores, is admirably adapted to supply the needs of the water well trade, and we are entering this field with all the vim and vigor which have built up our immense oil well business in the past five years.

If you are in need of an engine, pumping outfit, casing, belting, tools (small or large), pipe, fittings or supplies of any kind, we will be more than pleased to serve you. You will find our goods of the better grade only, our delivery prompt, and our prices the very lowest, consistent with first quality.

We will take pleasure in supplying any quotations or other information you may desire and will appreciate an opportunity of making your acquaintance.

Ask for our special bulletins on water well supplies. Mailed free.

J. F. LUCEY CO.

Water Well Dept. 1493-9 E. Sixth St., Los Angeles.

WHY you should have

A Likfreshing Plant

BECAUSE you can easily and cheaply convert your perishable fruits and vegetables into staples.

LIKFRESHED products are superior in every way—less loss of weight and food contents—less sulphur required. Superior flavor and keeping qualities—"Just Like Fresh." Cost of installing plant is nominal. Expense of operating is less than sun drying. For other reasons and full particulars, write or call. Be sure to look into this matter this season, as it will prove a money maker for you.

The California Likfresh Co.

THE WANN COMPANY, Selling Agents

303 Union Savings Bank Building, Oakland, Cal.

References—Wellman Robbins Mercantile Co., Oakland, Cal.
First National Bank, Berkeley, Cal.

When writing advertisers, mention Cultivator.

Deciduous Fruit Culture

THE HORTICULTURIST'S MISSION.

The world was but a wilderness
Till art's celestial birth
Spread culture, like a robe of light,
O'er all the joyful earth.

Wild grasses waved their scanty store
Over the untilled plain,
That now with life and bounty filled,
Bend down their ripened grain.

The wild-wood briar waited long
For love, that should disclose,
By Art's sweet power, from meager buds
The full and blushing rose.

Sour grew the rough and stunted crab
Within the thorn tree's shade;
Where now, amid the glancing leaves,
Through Culture's magic aid—

Swells forth the Apple's glowing cheek,,
With juices rich and rare,
And hangs with melting nectar filled,
The tempting golden Pear.

And, in the Future's brightening years,
Progression's law divine.
Unfolding still, with still new charms,
Shall make the landscape shine.

So that the day shall never dawn,
In which still fairer flowers
And fruits more luscious, shall not come
To bless this world of ours.

Then rosy Hope, with heaven-eyed Faith,
Shall cheer our labors wise,
Till this once rough, dark wilderness
Shall change to Paradise.
—Ohio St. Univ. Bulletin.

COMMERCIAL VALUE OF FRUITS.

Several questions have come up that involve the general subject of the commercial value of apples and other fruits. What constitutes their commercial value, what varieties are suited to be grown for market in certain sections or soils and what are the means of knowing which to plant are all questions of material value.

What Is a Commercial Fruit?

In short, it is one that will sell. The most prominent characteristic of all that attracts the average buyer is appearance. Although there may be other points of value that attract special customers who know them, the ordinary buyer uses his sight more than any other of the senses. This is entirely natural and we cannot blame him any more than we can blame the honey bee for hovering about the bright colored flowers, although they may not be able to get honey from them. The Ben Davis apple is a good illustration of this fact. I was in New York city lately and as I had the opportunity to see what was for sale and at what prices, on the fruit stands, I stopped at a number of them. At several of them I saw Ben Davis and Newtown apples of the same sizes selling for the same prices. The most of them were from the Pacific coast and those of about two and one-half inches in diameter were bringing five cents each, with the miserable Ben Davis selling more readily than the Newtown of very much better quality. The brighter red color did it. It is almost useless for the dealers to take the time and trouble to tell their customers about the better qualities of inferior looking varieties. They will rarely believe it and if they do they will often decide in favor of beauty as against quality.

The condition in which fruits are packed and presented to the customers has much to do with their appearance. Those which are not really first-class in appearance may be made to look much better than they really are by having them clean and neatly arranged in attractive packages. Too much care in this respect can scarcely be used. Freedom from decay, bruises and other defects is also important.

Of course the flavor is a part of the market value of any fruit and with the most intelligent consumers it is considered above all else. The eating is the final and most important test to all and to this we should try to bring both the grower and consumer to agree.

Size is another factor and is really a part of appearance. While the largest varieties of fruits are not often the best, the larger sizes of any given variety grown in one locality are usually better in flavor than the smaller ones. They are better developed and have had better opportunity for attaining their normal flavor.—H. E. Van Deman in Green's Fruit Grower.

THE STANDARD.

Luther Burbank states that in his opinion, and it is supported by a number of large growers, he has now "the best prune ever produced." It is a combination of the Tragedy and the Sugar prune and he states that "the trees are enormous and never failing bearers and good healthy growers."

It was our pleasure this week, by the courtesy of Mr. Geo. C. Roeding of Fresno, to test this new variety, the fruit of which is very large, thick-meated, and small pitted. The fruits sent to this office measured four and a half inches in circumference the small way and nearly six inches the long way. Skin is purple with a very heavy blue bloom, flesh amber or honey yellow, fine grained, and if anything rather firmer meated than most of the drying prunes, and a perfect freestone.

While at Mr. Burbank's home a few weeks ago, we tasted the dried fruit and found it exceptionally fine eating. It seemed hardly as rich as the ordinary French prune, but we note in an analysis of the Standard furnished by Mr. Burbank that it shows a percentage of sugar of 18.9, whereas the average French prune shows 18.5. In percentage of flesh it also shows a gain over the French prune, the proportion being 96.5 to 94.2. This is perhaps more forcibly shown by comparative percentages of pit to fruit; in the French prune 5.8, in the Standard 3.5.

SCORE FOR WATSONVILLE APPLE SHOW.

The management of the State Apple Show at Watsonville has settled on the following system of scoring for this year's exhibits:

Perfect score will be 1000 points, divided as follows: Six hundred for perfect fruit, 100 for uniform size, 100 for color, 200 for perfect pack. In judging, 40 points will be allowed for bulge, 40 for alignment, 40 for height at ends, 40 for compactness and 40 for attractiveness and style of pack. For each wormy apple 40 points will be deducted, for other imperfections such as scab or scale eight points will be taken off. Other things being equal, the straight 4-tier pack will be given preference in the carload exhibits. No distinction will be made between 4-tier, 3½-tier and 3-tier pack in smaller lots. All varieties will compete for sweepstakes prizes on an equal basis.

Mr. W. R. Shively of Upper Lake reports as to crop conditions in Sonoma County: Cloverdale grape crop approximately three-fourths; Windsor, Geyserville and Cloverdale prunes, 90 per cent. The same sections will have fully 75 per cent of a hop crop. Geyserville grapes are running 85 per cent and peaches 65. The Ukiah hop section is coming on fine with 90 per cent of normal crop.

The last census figures offer a showing of 4,183,600 more hogs killed in this country for food purposes than all the other animals combined, including beeves, calves, sheep, lambs and goats.

Bluegrass, when the season is favorable, is a very profitable crop. Last year it sold for from $7 to $10 a bushel; there being so little, farmers practically commanded their own prices.

The city of Chicago eats approximately 4,000,000 cantaloupes a week, from July 1 to September 15.

Apples are selling at 20 cents apiece in Europe, which takes kindly to the western fruit of the United States.

SPECIAL FLOWER SEED COLLECTION

WE will mail you a package of FLOWER SEEDS containing a dozen or more old-fashioned hardy Annuals, such as PHLOX, POPPIES, CANDYTUFT, MARIGOLD, COSMOS, MIGNONETTE, Etc.

You can sow this package of choice seeds in out-of-the-way corners of the garden, in odd beds around young trees or on embankments and with little cultivation you will have a mass of gorgeous and continuous blooms, sweetly fragrant, all through summer, till killed by frost.

This package will be sent to any address for 10c. in stamps or coin. Write Dept. A

THE Chas. H. Lilly Co.
SEATTLE

For over a decade the leading seedmen on the Pacific Coast.

LILLY'S SEEDS 1912 SEED ANNUAL Free on Request

BULBS

For fall and winter planting, also Flower Seed for fall sowing.

New catalog now ready, mailed free upon application.

Now is the Time to Sow

Payne's Royal Exhibition Pansy Seed
Giant Perfection Stocks and
Payne's Christmas Flowering Sweet Peas
all described in the above mentioned catalog

Eucalyptus Seeds

a specialty. Write for pamphlet "Eucalyptus Culture" describing 33 species, with information on planting for commercial purposes.

Theodore Payne
345 S. Main St., Los Angeles

Sievert Distillate Oil Burners

the most efficient all round Heating appliances for Stoves, Ranges, Boilers, Water-Heaters, and especially Hot Air Furnaces of all kinds. Brooder House and Heating Stoves. Send for Free Circulars.

Sievert Oil Burner Co., Manufacturers.
710 N. Main St., Los Angeles, Cal.
All Kinds of Oil Storage Tanks.

THE CLIPPER

There are three things that destroy your lawns Dandelions, Buck Plantain, and Crab Grass.

In one season the Clipper will drive them all out.

Clipper Lawn Mower Co
Dixon, Illinois.

Bees and Their Care

MARKETING THE CALIFORNIA HONEY CROP.

Why Western Honeys Are in Demand in the Eastern Market.

By Ralph Benton.

In a recent issue of The Cultivator (August 17th) we made the statement that there are perhaps three outstanding reasons why the citrus market stands fast and keeps pace with the increased production of the industry behind the market; and the first of these reasons we named as ripe fruit. We dwelt somewhat upon the necessity of ripe honey as a first essential to successful marketing. The other two reasons why the citrus growers are so successful in marketing their crops are: firstly, concerted and persistent advertising, and second, an effective channel of distribution, i. e., the Citrus Exchange. It is astounding the wholesale advertising schemes that California is carrying on. We sometimes wonder if it is not being overdone; but everyone who comes to the coast seems to get the fever, and so the enterprise goes on. The secret of this successful campaign probably lies in that the advertisers always manage to make good. We are a firm believer in continued and systematic advertising; but an equally firm believer that after all is said the best advertisement for an article is an invariably high grade product a little bit better than can be produced anywhere else. We shall have more to say later about systematic advertising and a California honey exchange. Here we wish to discuss why it is a safe proposition for the California honey producers to launch a concerted and extensive advertising campaign for their product coupled with a well organized producers distributing agency—in other words, why Western honeys are in demand in the Eastern markets — why California honey is in demand in the markets of the world. In our former paper we presented a table of figures showing the relative composition of flower nectar and different types of honey. We herewith present again these tabulations as there are some features in the composition of the several types of honey that will help to make plain the position of California honeys in the market.

diseases, and, finally and most important of all, the exudations of plant lice and scale insects. Aphids and scale insects take large quantities of plant juices containing sugar into their systems and, accumulating more cane sugar than they can take care of, exude this superabundance of food material in the form of honey-dew. Plant lice are perhaps a more important source of honey-dew than are the scale insects, as the former are provided with regular tubes for the escape of such fluids, which frequently may be seen falling in fine mists from aphid infested trees such as poplars, pepper trees, native walnuts and apple trees in the orchard. These exudations, rich in sugar, are attractive to nectar loving insects, chief among which are ants and bees. This explains why ants are so frequently found associated with scale insects and plant lice. The ants do no direct injury, but indirectly facilitate the destructive work of the scales and particularly that of the plant lice by transporting the latter from place to place as new and fresh supplies of food are needed for their "milch cows," as the aphids have been termed by the student of ants.

Honey-dew, before it is gathered by the bees, is as it falls on the leaves and other parts of trees, open to contamination by bacteria and certain fungi which flourish in these dilute and sweetish fluids, elaborating oils and gums which in a chemical analysis of honey-dew raise the dextrin and ash content of such honeys away beyond the three per cent of the standard honey of the chemist and brand such products as "abnormal honeys" before the pure food law. These oils and gums are not only a source of trouble to the honey producer, but are also injurious to the tree and exceedingly troublesome to the orchardist, as anyone who is familiar with the smut of black scale, say on the olive tree, can testify.

Again, the tendency for honey-dew to ferment is a source of difficulty both to the producer and the handler of honey; and this tendency seems to be recognized by the bees and, no doubt, partly explains why the formic acid content of honey-dew is so large in contrast to the content of the average honey, which is only about half as great. We say partly explains, for

Type	Water	Invert Sugar	Cane Sugar	Ash	Dextrine	Formic Acid	Undetermined
Flower nectar	76.00	9.00	12.00	.25	2.75	.....	.....
Chemists standard	25.00	64.00	8.00	.25	2.75	Tr.	.....
Average for America	17.59	74.52	1.98	.23	2.09	.09	3.61
Poplar honey	17.02	65.80	3.10	.76	10.19	.19	2.94
Honey dew	15.46	64.84	5.27	1.29	10.01	.15	2.98
		As Levulose	As Dextrose				
Alfalfa	16.56	40.24	36.85	4.42	.07	.34	.08	1.43
Sage	16.43	42.75	31.22	3.39	.07	.62	.06	5.52

Abnormal Honey or Honey-Dew Honey.

It will be noted in the tabulations given that poplar honey, taken as a type of tree honey, and honey-dew, aside from being some 8 per cent to 10 per cent lower in sugar content than the average American honeys, run some 8 per cent higher in ash, dextrin and formic acid content than permissible in the chemist's standard. This is why these products of the apiary and all products from similar sources are branded as "abnormal honeys" and under the pure food law have to be labeled as "honey and honey-dew honey," or simply "honey-dew." For the general reader it may be in place to explain the distinction to be made between honey and honey-dew. Honey is the sweet produced from floral nectar, i. e., the nectar secreted by flowers or its parts, as modified by the bee and conforming to the standard recognized by the Association of American Chemists. Honey-dew is the extra-floral secretions of the plant, i. e., sweetish fluids secreted from the surfaces of leaves, from the stem about the stipules of such plants as the bean, oozings from trees caused from mechanical injuries or the attacks of bacterial or fungous

very likely at least some of the high percentage of formic acid enters in because of the extra working over which the bees give honey-dew on account of its large cane sugar and dextrin content. The presence of formic acid in such relatively large quantity makes honey-dew unsuitable for use as food by persons highly susceptible to bee stings and the use of even milder honey; and in fact its strong character, due in a large measure to the dextrin content, relegates these abnormal honeys either to the vinegar barrel, where a colored honey is commercially desirable, or to bakery use, where a dark and aromatic honey is usually used.

Why Buyers Desire Alfalfa Honey for Their Bakery Trade.

The bakery trade not only prefers a somewhat darker and aromatic honey, but demands first of all a Western honey because of its low water content, and alfalfa honey because of its high sugar content. Western honeys from the arid regions, which includes portions of California, average three per cent lower in water content than the honeys produced in the extended honey belt of the upper Mississippi Valley. It is also true of East-

(Continued on Page 285.)

STAR PORTABLE DRILLING MACHINES

More Profitable Wells

Can be drilled with the right machine. In buying a Drilling Machine, the first vital point is to be sure it will yield you the greatest possible service—and hence the greatest possible profits. You *must* know.

Star Portable Drilling Machines

have stood the test for years in comparison with all makes, and the very fact that fully 95% of all Portable Machines now at work in the Oil Fields are Star Machines is all the proof necessary as to their superiority for all kinds of Well Drilling.

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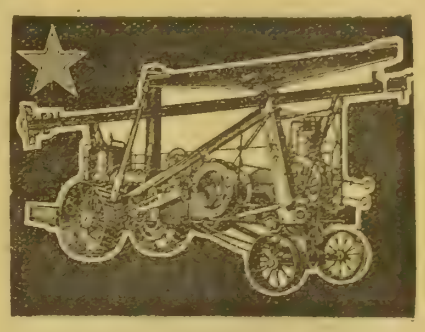

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Saving Fruit Trees

You can protect your fruit trees against borers, rabbits and mice by a simple and sure method.

One large fruit grower with an orchard of 12,000 trees, all protected by this method, considers that he has solved the borer and rodent problem. He has been using the remedy now for nine years.

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"Saving Fruit Trees"—which gives the method in detail, and the testimony of those who have used it.

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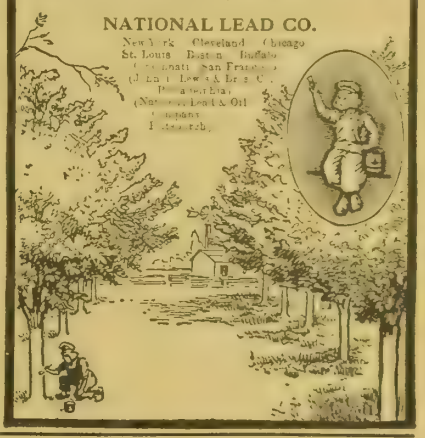

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$1000 profit per acre; plant now. Berry plants of all sorts. Cut this adv. out and mail today.

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The Rhubarb and Berry Specialist

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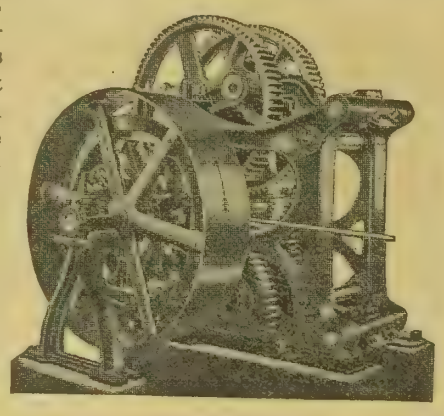

Water is King in California, especially in the South, and anyone having crops or orchards depending upon it should not experiment. The POMONA DEEP WELL PUMPS are the standard for reliability and efficiency, and can be depended upon to do their work with less trouble than others. They are manufactured by a company who have the equipment and ability to build their machinery in a first-class manner and to install them satisfactorily to their customers.

Send for literature and price, or if possible come to Pomona.

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Egg-More

The biggest egg producing food made. Not merely a strong tonic, which is not advisable to be fed regularly, but a FOOD, highly concentrated and very rich in protein. EGG-MORE mixed in proportion of one pound to 6 lbs. of good ground grain feed will keep the fowls in good health, maintain a strong and vigorous system, make the hen molt early, feather out quickly and convert the protein into eggs. It has been doing just that for six years, and each year the sales have greatly increased. It is the biggest selling poultry food on the market today. 4 lb. package, 35c; 12½ lb. sack, 90c; 25 lbs., $1.65; 50 lbs., $3.00; 100 lbs., $5.50. We pay freight within 200 miles on sack of 25 lbs. or over. Send for EGG-MORE BOOKLET.

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Free Catalogs of Everything for Poultry and the Garden

Cows Give 262 lbs. More Milk Daily

After substituting a part of their regular feed with Proteina, says a leading dairyman. ¶ Unequalled for Cows, Calves and Poultry, and fed at a comparative low cost.

46% PROTEIN—10% FAT

Proteina is concentrated from the Soy Bean and contains 33⅓ more Protein. The U. S. Agricultural Dept. says: "A bushel of Soy beans is at least twice as valuable for feed as a bushel of corn." ¶ POULTRY MEN FIND PROTEINA BETTER THAN BEEF SCRAPS FOR LAYING HENS. Write for signed letters from Poultrymen and Dairymen.

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We can supply them in any number right now in the following breeds: Rhode Island Reds, Black Minorcas, Barred and White Rocks, White Leghorns, White Minorcas, White Wyandottes. The finest chicks we ever had are being produced right now. We get the choice of eggs from the finest flocks in Southern California. Send today for free 64-page book. We can supply PULLETS, Hens, Cocks and Cockerels of 19 kinds. We ship everywhere. Write us today. We are the WORLD'S LARGEST CHICK DEALERS.

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for Stock and Poultry. For sale at lowest market rates. BRAY BROTHERS Buyers of Grain, and Beans. Members of Merchants Exchange. 220 Clay Street, San Francisco.
Established in 1855 Correspondence Invited

Profit in the Poultry Yard

Practical poultry people who may have ideas from their experience as to methods of feeding and housing and general care of poultry will confer a favor upon the Cultivator and its circle of readers by sending in concise accounts. Mrs. Basley is always willing to answer queries, which with the experience of others should make this a most valuable feature in poultry life on the Coast. Opinions or matters of a personal nature should be omitted, but a concise statement of facts is always valuable.

DIPPING FOWLS FOR LICE.

It is generally agreed that lice and mites must be combated by the use of liquid or sprayed applications to the perches, buildings, nests and coops, while applications to the fowls themselves, if made at all, must be in the form of powders. The only exception which is frequently made in practice is in using lard or other grease on the heads of little chicks.

Dust Bath.

Granting that the dust bath is the natural means by which body lice are to be combated, it is still true that, by reason of wet weather, or other conditions, we frequently find more lice on chicks which have free range than we like to see, and early pullets not infrequently bring into winter quarters with them more lice than the winter dust bath will overcome. Where fowls are kept in large numbers, it is practically out of the question to dust each one thoroughly by hand, and the desirability of some more rapid method of individual treatment is unquestionable.

Dips seem such unnatural remedies that we are justified in trying them very cautiously, and the "wet hen" is a proverbially unhappy creature. It may also be thought that there would be no saving of time by dipping as compared with dusting, but in practice I think that the dipping will be found much more rapid, even though it be understood that the dip must be worked through the feathers with the fingers.

Two or three years ago one of the western experiment stations stated that the ordinary kerosene emulsion used for garden spraying could be safely and effectively used as a dip for poultry if reduced to a 10 per cent strength. This I have never tried, though I should not fear bad results from its use under conditions which would make any dipping safe; but this past winter I have had an opportunity to see the beneficial results of careful dipping with another mixture.

The Dip Worked.

One of my neighbors found last summer that his growing chicks were suffering with lice, and after trying lard, powders, and everything which the genius of the oldest inhabitant could suggest, he resorted to a dip which is a proprietary preparation, but evidently based on carbolic acid and a coal-tar or creosote combination. This mixture is especially prepared for spraying walls, painting perches, etc., but the maker was sure it could be safely used on the fowls themselves, and suggested what he considered the proper strength. This was tried, with the result that the first dozen chicks dipped were dead within a very short time, and the hands of the operator were nearly raw. The solution was diluted to about one-fifth the strength recommended and the dipping resumed, with the result that the chicks seemed to suffer no more serious inconvenience than from any other thorough soaking. The dip was well-worked through all the feathers, and the lice practically disappeared.

Just after the older pullets had been put into winter quarters it was found that lice were again multiplying, and about 100 of these birds were again thoroughly soaked and kept in a room with a stove and a good fire for about two days, as the weather was cold and the pullets were already laying and were depended upon for winter eggs. No bad effects were seen as a result of this dipping, and the laying was checked no more than might have been accounted for by the changes and excitement incident to the dipping and drying.

Effect Remains.

Shortly after the pullets were dipped six cockerels were put with them which had not been treated. I handled a number of them the last week in December and noted that the males were lousy and the females apparently free from lice. My neighbor was burned out soon after, and I bought this flock, which was of pure Barred Plymouth Rocks, and put them in a new building, of which they were the first tenants. From time to time I noted the almost perfect freedom of the pullets from body lice. Some were killed, and in scalding for picking the odor of the carbolic dip used three months before was always very pronounced, although it was not noticeable on the living fowl. These fowls were kept under cover until spring opened, so I cannot say whether the effects would have been so lasting if they had been exposed to the weather. Up to the present time, about four months after the dipping, there are hardly any lice to be found on those pullets.

I am not writing this to advocate the purchase of quack poultry remedies, especially as the people who put up this material did not know what strength could be safely used on the fowls, but it does seem to me to point the way to a practicable source of relief in many cases where immediate and effectual treatment is demanded. The fact once established that the carbolic or creosote dips can be safely and effectually used, it becomes a matter which any intelligent man can work out for himself, to determine just what strength to use for different ages and conditions, and in warm weather there is little or no danger in giving a hen or chick a thorough soaking if it is not done until the sun is high, so that they will dry rapidly and without too much chilling.

The chief advantage of this treatment over dusting is its greater period of efficiency, for no dusting can render a fowl distasteful to vermin for as much as four months at a time. In fact, it is not easy to make a powder adhere to a half-grown chick on free range so as to be percentible the next day, and the benefit is chiefly the smothering of the lice which happen to be covered with the dust at the time of application.

I may add that in the case of these pullets which have been under my observation, there was no sticking together of the feathers nor any outward evidence that they had been dipped. On the contrary, they were an unusually clean and attractive lot, and have laid eggs all winter which have shown a higher percentage of fertility than is usually found in cold weather.—Country Gentleman.

SAVING MONEY ON FARM EGGS.

Improper and antiquated methods of handling eggs in the United States result in losses that reach an estimated total of $45,000,000 annually. This is 17 per cent of the estimated total value of the entire crop. Practically all this loss is borne by farmers and other producers, and a large part of it can be prevented. How the Department of Agriculture through its Bureau of Animal Industry is solving this problem is told in Bulletin 141 just issued, entitled "The Improvement of the Farm Egg."

In order to show how this loss might be prevented, the Bureau of Animal Industry last year sent experts into Kansas to conduct investigations. The results of the first season's work are given in detail in the bulletin with suggestions for improvement that may be applied anywhere. "Although but one season has been spent by the Bureau in this work," says the bulletin, "several much-desired changes have been brought about. The most important of these was the adoption by shippers of the 'loss-off' system of buying and selling eggs."

Previous to the work of the bureau Kansas eggs were not very popular in the markets outside the state. Quantity rather than quality was a handicap the shippers encountered. The immediate effect of buying on "loss-off" system produced such a marked change in the quality of the eggs reaching the market that outside buyers now manifest a preference for eggs bought in this manner.

COULSON'S POULTRY FOOD MADE IN PETALUMA

A Successful Poultry Season is Now Opening

For a number of years we have kept a close watch on the poultry business. We have analyzed conditions relative to egg prices and market demand. Each year the poultry business has taken on a more vigorous tone. As advanced methods have come into use, and the population of the state increased, so the poultry business has shown a greater volume.

We Have Seen Small Beginnings Made With 100 to 200 Chickens Come to be Large and Flourishing Poultry Ranches

Success in poultry raising is largely a matter of food. It is a question of securing the best at the right price. After we have been mixing and feeding food for years, we have learned much that is of vital interest to the poultry raisers of California. In the purchase of various ingredients composing our food we are particular to get ONLY THE BEST. This policy has resulted in producing a food that has no equal on the market. It is the food that has made the poultry business the big factor it is today in California.

C-O-U-L-S-O-N'S Our Poultry Food Insures Success

TO THE BEGINNER: If you are considering entering the poultry business either commercially or for fancy poultry we want to send you our books of instruction. They give instruction as to housing, feeding and general care; they describe diseases and tell how to avoid them, or cure them if they get a start; they describe various lice, bugs, etc., that infest poultry; in short, you can have the whole story free by sending us your name and address.

TO THE COMMERCIAL POULTRYMAN: We can supply our food in ton and car lots at prices less than you can procure and mix the various ingredients. Let us explain how we can save you time and money. Write us your requirements and we will submit a proposition which will interest you. Our instruction books will be found interesting to you.

TO THE FANCY POULTRYMAN: If you value good stock don't feed poor food. Buy the best. Our food will keep your birds in prize-winning condition, give them tone and natural vigor and keep them in perfect health.

At This Season Feed

COULSON'S EGG FOOD MADE IN PETALUMA

to your hens and maturing pullets. This food will pay for itself many times over in increased egg production.

We have made it easy to secure our food, by establishing agencies in every poultry center. You will find a complete supply on hand at all times.

COULSON'S FOOD MADE IN PETALUMA

Get in line for a big season—the biggest ever. Feed a successful food, care for your hens, keep their quarters clean, avoid drafts, and you can count on a profitable season.

COULSON'S FOOD MADE IN PETALUMA

Coulson Poultry and Stock Food Co.

PETALUMA, CALIFORNIA

Germain Seed & Plant Co., Los Angeles, Agents for Southern California

COULSON'S POULTRY FOOD MADE IN PETALUMA

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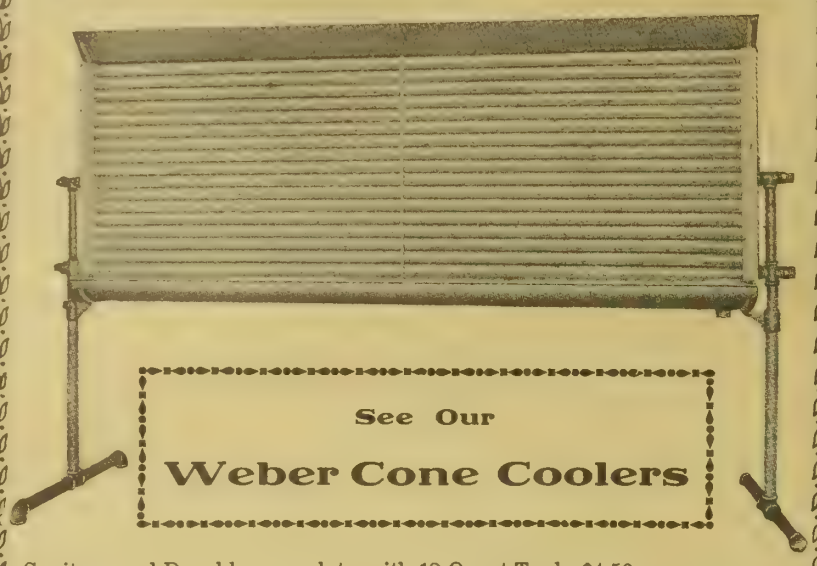

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Will cool 30 gallons of milk per hour to within three degrees of temperature of water.

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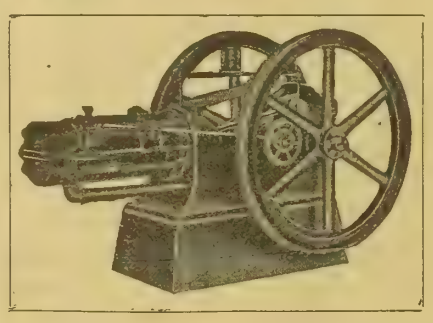

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Live Stock and Dairy

Dairymen and stockmen are requested to write of their experience. Mrs. Sherman is always willing to answer queries and this, with experience of other workers, will make this department of greater value.

HORSES.

By Mrs. M. E. Sherman.

The snap that a thoroughbred sire passes to his colts is a desirable quality in a driving horse. The horse that skips happily down the road with head erect, ears pointed forward, seeing everything, is a pleasant companion to while away the tedium of the road. I doubt if ever there is a greater pleasure than driving a good horse with a firm, light hand, as he goes merrily down the road. Even Shakespeare would not have touched the feeling of comradeship if the cry of the king had been "My kingdom for a motorcycle." The poor king wanted the courage and affection of a good horse to help him escape, not only his enemies, but to escape from the mental overthrow and defeat.

Half Breeds.

The demi-sang, as the French call them, have great endurance and plenty of ginger, while their size, increased by the use of the large dam, enables them to handle heavier carriages. These demi-sang or half bloods have great intelligence and are apt to be level headed in a crush, even if they are high temepred at other times. A woman can readily handle them, for they are like someone else that she knows well how to manage. Both are handled with the silver bit and the silken reins of affection. The demi-sang came into direct use to supply the need for a larger sized animal of quick action. A further attempt to give more weight and size with ability to handle loads at a trot has given us other strains between the roadster and the draft animal.

Express Type.

The coach type when pure bred makes a desirable carriage horse. These same sires make a good cross on commoner mares for express horses. The Cleveland Bay was brought from England to supply horses of style and weight. Germany and Belgium, also, sent good coach horses to America for the same purpose, while the French Coacher was smaller and more speedy, rather in the roadster type. The old farmer used to say in using these horses: "If the colt is a saddle or carriage animal I will secure a fancy price, but if it is not, it will still be a good work horse." The reason these crosses did not give California more of these useful animals is that the people were too impatient. The aged or mature stallion or bull must be acclimated before they are certain as breeders. It is safer to bring yearlings to California and await their development than to bring the older animals. It is just about as quick in return in most cases. The farmers are disgusted with animals brought here for breeders, and it is not uncommon to hear them say that they are "no good."

They often regard all imported animals as luxuries of the rich, and wait to see them proven before accepting them as valuable. The mares bred to the finest imported horse were often of a weedy type. The farmer that had a pure bred mare had to pay more than one that had a scrub to breed. This has seemed, to anyone interested in stock, as a backward movement to encourage the use of cheap mares rather than of good ones. We have used the demi-sang mares, and have had good success with the crosses of Cleveland Bay, Hackney, French and German Coach horses. The English Hackney did not appeal to the farmers of Fresno County when Fulton Berry brought Paragon here some years ago. We had several good colts from him, but the trappy action did not suit the Cailfornia buyers. Pat remarked of one of these animals: "W'at's the use of a horse thot trots all day in the shade o' a tree?"

Thoroughbreds.

We all of us sometimes misuse words of our language, and we are all in turn pained by the misuse of pet words of our own. The word thoroughbred, as used and written by some of us as descriptive of cows, pigs, sheep, goats, dogs, cats and chickens, is rather awful to the rest of us. The use in extreme case I noticed in an agricultural paper where the editor had allowed an advertiser the privilege of using his columns with the announcement of a thoroughbred Percheron for sale. The thoroughbred Jersey and Holstein cow has long been a familiar example of this kind of mixing up of words. Remember there is but one animal that is a thoroughbred, and that is a running horse descended from Arab or Barb ancestry. Tradition tells us these animals were imported, often both sexes, and again a certain number of the fleetest English mares were used in the mating. The actual beginnings were early in 1800, when the first horses' and mares' pedigrees were put down in the stud book kept by the official agent of the Jockey Club of England. The first volume was issued in 1808. While there are no doubt many fanciful pedigrees in the breeding of the first animals, yet by this time the cold blood has been overwhelmed in the general goodness, and the race of running horses can be relied on to transmit certain qualities and also their physical characteristics to their offspring. The only animals now admitted to the stud book are those whose sire and dam are both recorded.

Every pure race of animals has its book of official record that gives the number to the offspring of animals that are already recorded. These animals of other breeds, herd or stud books are called pure bred, full bloods, registered or standard bred according to the particular terms used by the association or society that holds the books of record.

The standard bred horse includes the trotters and pacers and is of American origin. There is a heavy strain of thoroughbred blood in many of the trotting animals, yet many of the animals entering into the Standard book had to qualify by showing speed. The old strains of trotting stock of Gray Eagles, Clays, Hambleton, and later Wilkes and many others, including our own McKinney, have added luster to the Standard trotters.

GIVING THE SWISS MILCH GOAT A WELCOME TO CALIFORNIA.

(Continued from Page 265.)

able to an animal for relief from a broiling sun as to ourselves. Again, wandering dogs are a menace to staked does, and I have known of several instances where the helpless creatures were killed by vicious dogs. Another wrong is to ship a doe in milk a journey greater than twelve hours when no provision for milking her can be assured. The only time does can safely be shipped is when they are dry, and it is most unwise to ship a pregnant doe that has passed the second month since being bred. When shipping goats, they will stand the journey best if more than one can travel in the same shipment, though not necessarily in the same crate. The crates should be comfortably large and provided with bedding, hay in a sack fastened to outside of crate, a pail of water, and full directions for feeding and watering while en route.

Should goats scour, one of the best and simplest remedies is a feed or two of fresh live oak leaves, which quickly act as an astringent.

Hornless goats are far preferable to those with horns, and it is well worth while to dehorn horned kids. This may successfully be done by applying caustic potash to the buds when the kid is two days old. If not treated until the kid is several days of age, it is almost impossible to destroy the growth. We find the best method is to use a small swab well saturated

Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 225-227-229-231 East Sixth Street, Los Angeles.

Cream Separators, all sizes and prices. O. J. Weber Co., 225-227-229-231 East Sixth Street, Los Angeles.

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Gombault's
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A Safe, Speedy and Positive Cure for Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.
As a Human Remedy for Rheumatism, Sprains, Sore Throat, etc., it is invaluable. Every bottle of Caustic Balsam sold is Warranted to give satisfaction. Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address
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Anthrax and Blackleg
VACCINES
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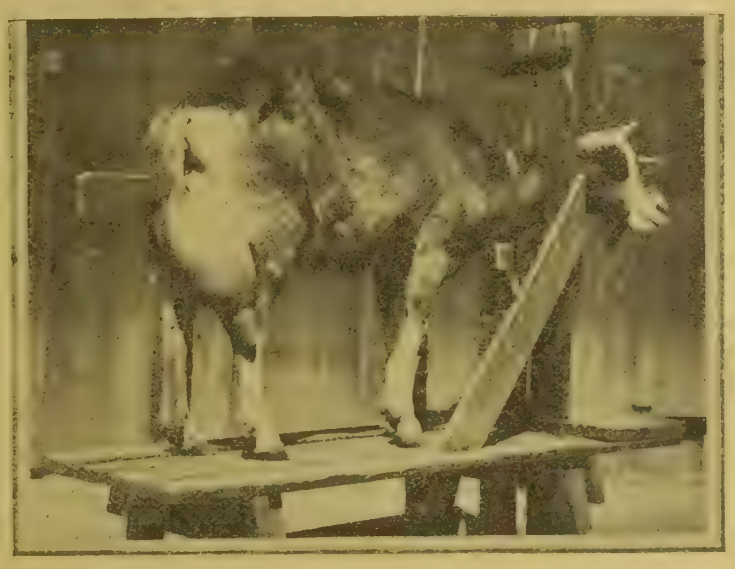
with the caustic, made liquid with a few drops of water. The greatest care must be exercised to prevent any caustic getting into the kid's eyes. To avoid this, rub oil or grease in a circle around the base of horns before applying the caustic, but if the oil touches the buds the caustic will have no effect.

First cut the hair immediately touching the base of the buds, rub the oil far enough away not to touch the buds, and with the swab apply the caustic generously to the base of the buds. Hold the kid for ten or fifteen minutes to prevent it scratching its head. If necessary, repeat this operation once or twice on following days.

An average Toggenburg doe yields between three and four quarts of milk daily, and in some instances they may approach very close to the five quart mark. Their period of lactation is the same as that of a good cow. We consider two months rest during the year a proper interval for them to remain dry. The half grade Toggenburgs are in rare cases almost equal to the thoroughbreds in milking capacity, but as a rule they may be considered about half as good, and as the infusion of Toggenburg blood increases from generation to generation, the quality of the grades increases proportionately.

Our famous imported "Fanette" made in one season the great record of 1,709 pounds of milk; kidding Feb. 8, 1909, buck and doe kids. Her record was begun Feb. 14, and the milk



Imported Toggenburg doe "Fanette" in milking stand. Registry No. 151 in A. M. G. R. A. Made grand record of 1709 pounds milk in one season. Owned by Winthrop Howland, Rancho El Chivar, Redlands.

most carefully weighed morning and night until she was dried off Jan. 29, 1910. Her greatest daily yield was 9 pounds 10 ounces, her greatest weekly yield 63 pounds 11 ounces, and her greatest monthly yield 247 pounds 6 ounces.

This record was made on range feed, mostly of weeds, with less than a pint of grain additional per day. Had she been stall fed and forced, her yield could have been materially increased.

Our Toggenburg doe "Griselda," bred in California, yields 8 pounds 7 ounces of milk per day, and an exceptionally fine grade doe is good for 7 pounds 8 ounces.

We sometimes hear of does yielding as high as six and seven quarts of milk per day, but this is simply exaggeration, and Peggler, the English authority on milch goats, says he has yet to see the doe that can exceed five quarts or ten pounds per day.

The only accurate way to secure a record of milk yield is by weight, a pound equalling one pint, for it is possible by milking into a small vessel such as a quart measure, and measuring foam together with the milk, to greatly exaggerate a yield, even though the intent of the milker be honest.

Butter, as well as most delicious cream cheeses, are products of goat dairying, and the family wishing to provide these may by keeping two or three good does easily supply the table with both. It is estimated that from five to seven goats may be kept at the expense of one cow.

To further the interest in milch goats the American Milch Goat Record Association keeps a careful record of all eligible goats owners may care to have registered in its books. Does yielding a minimum of two quarts daily are eligible to registration, no matter of what strain, and thoroughbreds may be registered as kids, provided the names and pedigrees of both parents are already entered upon the books of the association.

The members of this association are exceedingly fortunate in having as secretary a gentleman of the sterling qualifications and devotion to the interest of the industry as is Mr. J. C. Darst, of Dayton, Ohio. Under the secretaryship of Mr. Darst the association has grown and prospered in a most satisfactory manner.

Often there are offered for sale goats advertised as Toggenburgs that upon investigation are found to be one-quarter or one-half Toggenburg grades only.

In buying stock it is best to request a pedigree, and if the goat is a thoroughbred the purchaser should receive its properly signed certificate of registration in the A. M. G. R. A.

The following works on the subject of milch goats are considered as standard authority and are of great assistance to the breeder: "The Book of the Goat," by H. G. Holmes Pegler, Hon. Sec. of the British Goat Society, published by L. Upcott Gill, Bazar Buildings, Drury Lane, W. C., London, England; "The Case for the Goat," by "Home Counties," published by E. P. Dutton & Co., New York City; and U. S. Bureau of Animal Industry, Bulletin No. 68, entitled "Information Concerning the Milch Goats."

It is a surprising fact that a people so progressive as Americans have neglected to take advantage of milch goats as have the nations of Europe. Throughout Switzerland, France, Germany, Belgium, Spain, Italy, Norway and Sweden, England and Ireland, the goat is highly prized for its health giving milk, and in these lands the hardy peasants are able to benefit from its keep, whereas they would in many cases be unable to afford that of the cow. So highly are the Toggenburgs valued that in one season ten thousand dollars worth of this breed were exported from Switzerland.

At present there are few representatives of pure Swiss stock in the United States, but those here are highly prized, and among them are some of most valuable strain.

Considering that goats are far more economical to keep than cows, may be easily handled by women and children, are much cleaner and pleasanter to milk on account of their short tails and for the fact that they are but little bothered by flies, as the herds increase in this country we may expect to see these thrifty little dairy animals supplanting to a great extent our old friend, the cow.

Following is an analysis of goat's milk and cow's milk taken from "The Case for the Goat":

	Goat's Milk.	Cow's Milk.
Water	83.21	87.56
Butterfat	7.30	3.63
Casein	4.18	.....
Milk sugar	4.10	8.81
Ash	1.21	.....

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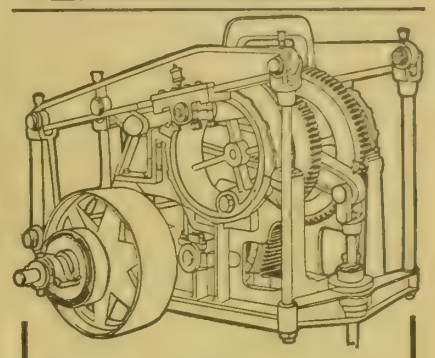

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FARMERS NATIONAL CONGRESS.

The next session of the Farmers National Congress will be held in Columbus, Ohio, October 12-16. Governor Harmon of Ohio, Gifford Pinchot and other noted speakers will be present.

STATE FAIR.

The total receipts of the fiftieth California State Fair were $33,750, a falling off from the 1910 total of over $19,000. The expenses, like the receipts, however, were much lighter than last year. The biggest day was Wednesday, August 31, with $6,522 gate receipts.

RIVERS AND HARBORS.

The next convention of the National Rivers and Harbors Congress will be held in the city of Washington the first week of December. Noted speakers will be present and deliver addresses on the development of water ways, but more especially on the conservation of water power and the reclamation of land through drainage.

IRRIGATION IN MONTANA.

Montana has not been generally considered an irrigated state, but the 1910 census shows 8,970 irrigated farms, an increase of nearly 12 per cent in the decade. The most pronounced favorable feature in Montana's agricultural statistics is the great increase in number of farmers, almost double that reported in 1900. Acreage irrigated from flowing wells is only 207, but from pumped water, 8,023. The pumping capacity, expressed in horse power, was 3,057.

DATA FOR COMMISSION.

The California Highway Commission has requested filing with it of complete maps of every county in the state, together with suggested routes for state highway work and data as to population and assessed value of all towns. The commission has a difficult problem in constructing roads which will be acceptable to every county in the state and come within the limits of its $18,000,000.

BACK TO THE FARM.

An organization has been formed in Chicago, the object of which is to "bring together the man and the land." It is composed of immigration officials of various states, and its purpose is to in every way aid "all worthy persons in securing both home and employment, but in no event shall we in any way encourage any plan of importing foreign laborers to our shores, but rather care for, teach and assist those on American soil." Statistics on each state's resources will be gathered, and encouraging back to the farm clubs will be features of the work.

COOPERATIVE TESTING.

The Pennsylvania Railroad system is aiding more intensive farming and encouraging farmers to work together for the betterment of the farming industry in states through which its lines run. One of the first works undertaken by an association, formation of which was induced by the railroad, is cow testing. An expert from the Pennsylvania State College has been secured to aid in the formation of associations and in the testing of cows belonging to members. He will visit each herd once each month and assist in the weighing of the milk and make tests, keeping a tabulated report and generally advising the farmers. This service is to cost the farmers but a few cents each month.

NATIONAL DAIRY SHOW

The National Dairy Show to be held at Chicago October 26 to November 4 promises to be greater than any of its predecessors. The premiums offered originally have been increased in some cases 20 per cent and some new classes have been added. A model dairy barn is to be one of the features on exhibition and a set of elaborate photographs made by direction of the Bureau of Animal Industry on trips through leading dairy districts of the world will show agricultural architecture and appliances in a most instructive way. In dairy matters this is doubtless the greatest show of the world.

INSECTICIDE RULING.

Under the recently enacted law requiring purity of all chemicals used in insect control, decision number one has been rendered, and it has to do entirely with insect powder. It first specifies what shall be considered insect powder, and while hellebore and tobacco and many other powders may be called insect powders, it was determined that the words should apply to powdered flowers of certain species of chrysanthemum. This is one of the simplest of insecticides, the least offensive to humans, and when fresh we believe the most effective against household insect pests. The ruling is that pyrethrum, or insect powder, shall not be adulterated even with the stems of the plant from which it is made, or, if stems are used in any proportion whatever, a qualifying word or phrase must be used to express that clearly to the purchaser.

PARCELS POST

In a few remarks made by the Hon. Jonathan Bourne in the U. S. Senate last June, he shows to a certainty that Americans are a long suffering people. The bill which he introduced simply called for giving to Americans a postal rate in their own country no higher than we charge to foreigners for mail transmitted partly within the United States. He stated: "A Japanese residing in New York can send an 11-pound package to his friends in Tokio at 12 cents, but an American in New York can send only a 4-pound package from New York to Washington and must pay 16 cents a pound."

This was only one of the instances cited, and yet Americans swell up with pride when they think of their great advantages over the Japanese and other foreigners, while they continually grant to these same foreigners privileges which they do not take for themselves. It is time for a change.

WHEAT IN U. S. AND CANADA.

During 1910 the United States produced 695,433,000 bushels of wheat and exported 91,883,000 bushels. In the same period Canada produced 149,990,000 bushels, exporting 56,554,000.

Going back some thirty years, we note that the United States produced only 383,000,000 bushels, exporting 121,000,000, or materially in excess of last year's export. The greatest year, so far as the United States was concerned, was 1901, when 234,000,000 bushels were exported. It may be noted that our production has increased materially since 1881, but since 1891 there has been little increase in exports. In 1901 the production was much greater than in 1910, but the most striking feature of the statistics is the decrease in exports. Plainly we are eating more bread.

Canada's increase has been notable. In 1881 she produced only 32,000,000 bushels and exported 4,000,000, since which time her increase in production and export has been steady.

CLEAN UP.

This is the favorable time for agitating the question of improvement organizations and other movements for the uplifting and beautifying of our state. The eyes of the world will be turned upon us during the next four or five years, and impressions of our character will be formed by a vast throng who will visit the state during the expositions to be held in 1915. The tendency seems to be to center the whole energy in a comparatively limited space in the city of San Francisco and in San Diego. These cities will entertain the greater number of visitors, but the expositions will not be the only educators California can offer—the entire state should exhibit its best self. This is true as to the visitors who come every year to California—the difference in 1910 is only in degree. Let us all practice beautifying and bettering until it shall become a habit, so that the people of the world will return to their homes with favorable impressions of our homes and surroundings as well as our expositions.

COUNTRY LIFE CONFERENCE

At its first annual conference last year at Davis the California Country Life Committee was created and that committee has busied itself for the last few weeks with arranging a program for a rural education conference to be held at the University Farm at Davis October 14th. The work of the committee is to further the development of country life and the more imporant object of this coming conference is to discuss the needs of rural schools. Doubtless resolutions or recommendations will be made looking toward a "redirection of this important branch of the public school system." It is urged that delegates be sent from all portions of the state. Those entitled to go as representatives are: The Governor, president of the University of California and president of Stanford University, president of each of the state Normal schools, head of department of education at University of California and Stanford University, state superintendent of public instruction and each county and city superintendent of schools; delegates to be appointed or elected, each with alternate: Five at large by the Governor, one by each subordinate and Pomona Grange, one by each local and county Farmers Union, one by each Chamber of Commerce, Board of Trade, or Improvement Club, one by the Commonwealth Club of California, one by each of the six districts of California Federation of Women's Clubs, one by each Agricultural High school, one by each state Normal school, one by council of education of California Teachers Association; a rural schoolteacher, and a rural school trustee to represent the County Trustee Institutes, by each county superintendent of schools. Further information may be had by addressing Prof. Leroy Anderson, Berkeley, Cal.

Agricultural News Notes of the Pacific Coast

Northern California

The big winery at Vina, Tehama County, started on September 11.

A Butte County paper asserts that a small black ant is busy eradicating "water scale."

The Butte County board of supervisors has made an appropriation of $300 for the purchase of fumigating tents.

Citrus growers at Oroville are complaining because of the indefiniteness of food expert Wiley's ruling on green oranges.

A tract of 3,500 acres near Auburn, Placer County, has been purchased and will be subdivided and disposed of in small tracts.

A poultryman at Ukiah, Mendocino County, exasperated at continuous thieving, offers a reward of $50 for detection of the thieves.

Between 700 and 800 men are employed in the fields of the Sacramento Sugar Company. Both day and night shifts are being worked.

Counties of the eastern side of the Sacramento Valley are uniting in an effort to secure a just proportion of the $18,000,000 road fund.

The alfalfa meal mill at Woodland, Yolo County, has proved a money maker. It is now turning out about twenty tons of meal daily.

Durham, Butte County, is boasting over its largest yield of almonds and the growers will reap rich rewards, some claiming as high as $165 per acre.

Several valuable wells have been developed near Germantown, Glenn County. On one ranch sufficient water has been developed to irrigate 200 acres.

Farmers of District Ten, Yuba County, are petitioning the board of supervisors for a drainage ditch, the water to be drained into the Feather River.

An expert from the Division of Entomology is soon to arrive in Chico from Washington to investigate butterfly pest, which has made inroads on the alfalfa fields.

Luther Burbank has produced two new cherries which he has named Late Napoleon and South Giant. The trees are pronounced enormous and never failing bearers.

The Anti-Mosquito League at Oroville has secured the services of an expert from the Hawaiian Islands to take charge of eradication of the pest in that section of Butte County.

After finding some of his stock in pasture with broken legs from bullets of careless hunters, a Ferndale stock grower has declared war and is making a ceaseless hunt for the hunters.

The Henry Frasier hop ranch, near Nord, Butte County, will yield this year approximately a quarter of a million dollars worth of hops. An army of pickers is busy gathering the crop, and individual pickers are earning as high as four dollars a day.

Butte County board of supervisors has been asked to place a bounty on the heads of jackrabbits. Great damage is being done to young orchards and to vineyards. Request is also made that coyotes be placed on the bounty list with five dollars on each scalp.

Central California

Kerman, Fresno County, boasts a one pound Alberta peach.

Kern County claims 20 per cent more sheep than a year ago.

Holdover raisins still going forward are bringing excellent prices.

So far as can be determined raisins are drying very light this year.

A new peach cutter and pitter is being tested out at the Selma dry yards.

San Joaquin County held its annual agricultural fair last week at Stockton.

Large numbers of Greeks are arriving at Fresno to assist in the grape harvest.

Fresno County Fair Association is providing for a wild west feature at the coming exhibit.

Something over 800 wild turkeys will be released in the mountains east of the San Joaquin Valley.

Kings County poultrymen are doing some vigorous kicking over poultry awards at the recent state fair.

A dairyman of Waukena, Tulare County, was fined $30 last week for unsanitary condition of his dairy.

The first annual picnic of members of the Pajaro Valley Poultry Association was held at Port Watsonville last week.

Peach buyers report a shortage of the dried product to the extent that many buyers have sold short and will be unable to deliver.

Governor Johnson has called for a cleanup day and it is expected the entire state will devote the day to tidying up roadsides.

Articles of incorporation of the Great Western Vineyards Company have been filed with the secretary of state. The capital stock is $5,000,000.

A green house at Menlo Park, San Mateo County, contains what is claimed to be the most valuable orchid in the world. One plant is valued at $10,000.

Grape growers are pushing the picking of raisin grapes as rapidly as possible to get them out of the way of early rains.

A gardener from the Royal Agricultural Academy and Horticultural School of Sweden recently visited Watsonville to investigate as to apple by-products.

Some raisin packers have made fierce onslaughts on the raisin market in hopes of bearing so that they can stock up at a low price, but most growers are holding firm.

A Tulare County peach grower gathered from 110 four year old peach trees over 8,000 pounds of peaches, with scarcely a cull in the whole lot. He sold for the uniform price of three cents per pound.

Tulare County has been appealing for federal aid in the control of the squirrel pest of that county. It now has assurance of government action as to the land located within the boundaries of the forest reserves.

To test the value of a motor car in transporting fruit, a Visalia grape grower took a load of table grapes from Globe, twelve miles east of Porterville, and made a 315 mile trip to San Francisco, and arrived with the grapes in good condition. The load was made up of 7,240 pounds of grapes.

Southern California

Pomona Valley is holding its fair this week at Pomona.

Between forty and fifty cars of Valencia oranges are going East daily.

Bean threshing is in full swing in the section of Camarillo, Ventura County.

The Upland Citrus Association held its annual meeting and picnic dinner at the packing house last Saturday.

Ten cars of early grapes shipped during the middle of July from Brawley netted an average of $1990 per car.

The Pomona Valley has forwarded this year 4,682 cars of oranges. The receipts in that one valley will be nearly $3,500,000.

Several Southern California counties are combining to install an exhibit at the 1915 Panama-California Fair at San Diego.

A fake story regarding the Colorado finding its way through an underground channel to the Salton Sea has ended in exposure.

The largest irrigation project in San Diego contemplates a dam which will impound waters for the Santa Maria and San Pasqual sections.

New artesian wells are being sunk in the Antelope Valley, Los Angeles County, some of which are producing a flow of thirty miner's inches.

Seventeen pumping plants are supplying abundance of water to lands in Apple Valley, San Bernardino County. These lands are near Victorville.

The first car of 1911 cotton left El Centro Wednesday morning, September 6th. It was billed to Bremen, Germany, and was made up of 50 bales.

A tract of land between Elsinore and Wildomar, Riverside County, has secured an excellent water supply. The lands are adapted to citrus culture.

A French inventor is visiting the beet fields of Southern California. He claims he has invented a beet harvesting machine which will do the work of 100 laborers.

The board of supervisors of San Bernardino County is contemplating material improvement of the road to Big Bear Valley. The Santa Ana Canyon route will be chosen.

Beet growers of Orange County are forming a co-operative organization looking toward securing higher prices for next season's crop. It is hoped there will be about 40,000 acres in the new organization.

At the recent annual meeting of the San Dimas Orange Growers Association remarkable growth of the exchange movement was shown. A new packing house has been constructed within the past year, costing $55,000. The shipments during the year aggregated 627 cars, for which the growers received over $337,000.

The Ontario Citrus Association shipped during the last year 297,603 boxes or 775 cars of oranges. The average expense for material and packing was 28.4 cents. Directors for the coming year are: G. W. Russel, president; H. E. Swan, vice president; Hugh Latimer, J. T. Lindley, B. E. Williams, A. T. Hamilton and J. A. Clark, and Charles B. Ford, secretary and manager.

The Coast

Oregon's estimated hop crop is 80,000 bales.

Wheat at Elgin, Oregon, is running 45 bushels to the acre.

Portland, Oregon, is suffering from a visitation of stink bugs.

The fruit crop of the Coeur d' Alene section of Idaho will be exceptionally large.

The heaviest wheat sales of the season were last week at Walla Walla, Washington.

Fifteen steam threshers have completed their season's work at Garfield, Washington.

Onion growers at Woodburn, Oregon, are claiming $60 per ton or nearly $500 per acre.

The principal dish at the recent statehood celebration at Yuma was ostrich egg omelet.

Swarms of locusts have caused a famine in the Sarangani region, Island of Mindanao, P. I.

Cleared stump lands near Moscow, Idaho, grew oats this year five feet and ten inches high.

Forest Grove, Oregon, boasts of more green lawns than any other town on the Pacific Coast.

One alfalfa seed producer at Yuma recently shipped 60,000 pounds of alfalfa seed to Los Angeles.

Alfalfa growers near Amity, Oregon, are hulling allsike clover and will receive big returns for seed.

British Columbia imported from the United States during 1910 $491,000 worth of fruit and vegetables.

Five cars of Jonathan apples were shipped from Toppenish, Washington, to Australia on the first of the month.

It is said that over 300,000 acres of land are being developed by irrigation in the state of Oregon at the present time.

Much profit is being made on cascara bark in the Trout Lake region, Washington. It goes to the Portland market.

Clover growers at Amity, Oregon, are selling their clover seed at $9.00 per bushel. The average is about five bushels per acre.

The chief horticulturist of the Lewiston Land and Water Company is planning a horticultural survey of the Clarkston fruit growing districts.

A 500 foot well at Las Vegas, Nevada, is flowing twenty inches of water and giving promise of adding wealth to many acres of valuable land.

Crop conditions near Winnipeg, Manitoba, are fair, wheat running eighteen to twenty bushels. The first carload shipped was about the first of September.

Secretary Fisher of the Department of the Interior has been requsted to supply at least $4,000,000 from the reclamation fund for the Umatilla project in Oregon.

Severe frosts at Winnipeg, Canada, have done great damage to all standing crops. In fact, all crops of the Saskatchewan and Northern Alberta section were injured.

The report that the Colorado River has buried itself in an underground channel two miles below Yuma afforded neswpaper reporters opportunity for many "reasons" for the conduct of that river.

Questions and Answers

THE EDITOR AND STAFF

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Strawberry Planting.

When is the best time to plant strawberries so as to assure crop next spring? What is the best variety? Are old plants replanted or are new plants best?—Subscriber, Colton.

Unless you can set potted plants I know of no method whereby you can get a full crop next season. But if you get good plants and set them about February 1st you will get a partial crop of very fine berries next spring. They will commence bearing in May and continue to bear until about July 1. Such plants if well cared for during the remainder of the season would be in shape to produce a fine crop the following year. The Brandywine is the best variety. The Klondyke is also a good berry and earlier than the Brandywine. Never use old plants but get thrifty, well-rooted runners. I never use runners that are from bearing beds as they will be weak and yield poor crops. Plant growing and fruit growing with the strawberry are—or should be—entirely separate operations. It will pay you to plow under plenty of stable manure in your strawberry ground before planting; as you cannot fertilize in any satisfactory way after they are set out. Plant in rows on level, 20 inches wide and set the plants 10 to 12 inches in the row.—Q. A. L.

Planting Peaches.

Is the fall a good time to set peach trees and grape vines?—Subscriber, Glendora.

The months usually termed fall or autumn by the calendar are too early for planting in California. Deciduous trees must be dormant and this does not occur sometimes until December, but once they are perfectly dormant they may be planted and any time from December to March will answer.

Sowing Lawn.

When is the best time to sow lawn, fall or spring. How should ground be prepared? Is there any danger of getting Bermuda grass seed with seed for lawn?—Subscriber, Glendora.

Lawn may be planted almost any month of the year in California if one uses due care and judgment as to handling according to the season. At this time of the year great care must be used to keep thoroughly wet. Fall planting gives one advantage in this that a fair start may be secured over the Bermuda. Spring planting is perhaps rather easier, but Bermuda and other weeds seem to be in their prime also at the same time and more weeding is necessary. If no work whatever has been done upon the ground the first step will be thorough irrigating which will wet down a foot or two deep. If stable manure is to be used it should be spaded in at this time followed by another thorough irrigation and a few days rest given to permit seeds to sprout. Hoeing or cultivation should follow with another irrigation. This may be kept up for a month or two and will help in reducing the number of weeds which will come after sowing the grass seed, and in addition will firm the ground which was deeply spaded and also rot the manure which was spaded in. During this hoeing continual care must be given to general leveling or surfacing up of the ground. When the weeds have been well started and destroyed by hoeing, the ground may be brought to finer tilth by continual hoeing and raking to make a perfect seedbed. Of course attention has been given before this to making a general even surface. If thoroughly tramped rolling may not be necessary, but going over it with a heavy roller is to be preferred if one is at hand.

After this preliminary work has fitted the surface a thorough application of bone meal is desirable. We have seen this applied at the rate of a large bucketful to the square rod and with excellent results. With a fine garden rake make the seedbed perfect, then on a damp and still morning sow the grass seed. According to preference this may be blue grass or mixed lawn grasses, but the writer prefers blue grass and white clover mixed in the proportion of four parts of blue grass to one of white clover. Apply seeds at the rate of one pound per 200 square feet.

If clean, well-rotted manure which has afterwards been dried and pulverized can be had, the application of this material screened and sowed nearly half an inch thick, is very desirable, but if this is not thoroughly rolled the danger of growing millions of weed seeds would overcome the advantages. After the seeding start wetting one to three times daily according to weather. Use only the very finest of sprays and be sure the ground is not allowed to dry or crust. On slopes the use of weeds or even barley sacks over the surface prevents washing of the soil. There is practically no danger of securing Bermuda grass with your lawn seed, but notwithstanding that it will come in your lawn thick enough to make you think it must have come with the seed. Continual work with the lawn seems to be the only way to secure immunity from this pest.

Oleander Poisonous.

Is it true that oleander leaves and blossoms are poisonous? If so, to what extent?—Subscriber, Turlock.

That oleander leaves are poisonous has been proven by experiments conducted by the Arizona Experiment Station, results of which are published in Bulletin 59 of that Station. The dried leaves were fed to stock with disastrous and even fatal results. The danger from this shrub may be shown by the fact that the Arizona bulletin speaks of five soldiers being seriously poisoned through use of an oleander branch in stirring barley soup. Another serious case of poisoning is mentioned in which over 300 French soldiers were poisoned by eating roast meat which had been skewered with oleander sticks. In one of the experiments a horse was fed 25 grams of green oleander leaves, a little less than an ounce. It must be stated, however, that the animal would not touch these, having been formerly poisoned by an offering of a similar dose in mash, so to test the matter, they were given to her in capsules. Two days later the animal was in low spirits and the third day dead. Apparently unless driven to it the animals will not touch leaves, so we assume that ordinarily there will be but little danger. but if they do eat, almost sure death follows.

Fly Repellent.

In our issue of July 20th we made reference to a fly repellent made from resin, soap and fish-oil. A subscriber, Mr. A. L. Reimers of Dinuba writes: "We made this formula, following instructions exactly, and find the mixture entirely worthless. We have tried and tried and find it attracts rather than repels the flies. We depend upon your paper for authoritative information and feel that you should know of this."

We appreciate Mr. Reimer's information.

Budding Young Peach Trees.

I have a young Muir peach orchard, two years old last spring, planted in a high, dry, sandy loam, very hard soil to get the trees started in, but the best kind of peach land when once started. Now in this orchard about a

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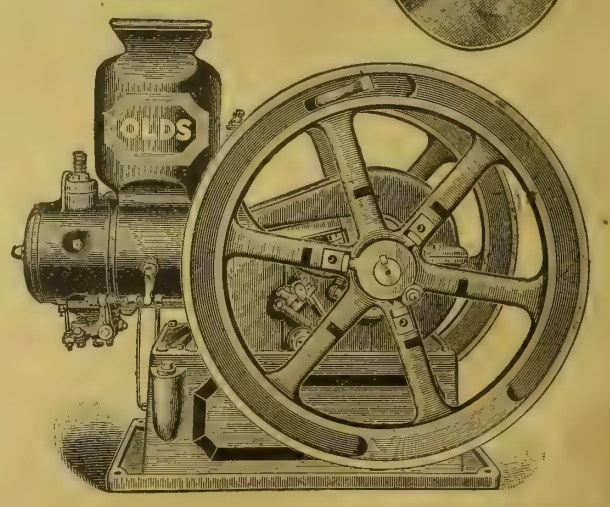

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third of the trees proved to be seedlings. What I want to know is owing to the trees being well-rooted now, would it not pay me better to bud the trees to budded fruit, rather than transplant or replant to budded trees? Couldn't I by budding, say three or four smaller limbs on each tree, and keeping all seedling wood back, make sure?—Subscriber, Calpella.

Unless you have had experience we fear you may have trouble getting a good stand of buds. The budding or grafting of stone fruit trees in orchard is not one of the easiest tasks. and yet if successful, as you say, you would be ahead with your established root systems. We believe we would prefer starting new trees from nursery if good thrifty trees could be had, giving a little extra attention to establish them the first year. If budding of the orchard trees is attempted, would advise spring budding. It is probably too late to catch flow of sap this fall on trees which have not been irrigated. In the spring when the sap is nicely started the attempt might be made with a few trees to test it out.

Age of Billy Goat.

Will our billy goat seven months old answer for breeding purposes and how late in the fall may goats be bred? Is it advisable to allow males and females in same pen?—M. & M., Farmington.

This query was referred to Mr. Winthrop Howland, owner of one of the largest goat dairies in this country and thoroughly qualified to answer questions, and he says:

"Would not advise use of buck under ten months of age, and twelve months is better. Does may be bred as late as January 1st, with good promise of 'taking.' If buck and doe are kept together in same stable they should be in separate stalls, as buck will otherwise annoy doe. We put buck with does only for a few minutes when breeding."

Discharge from Pipe.

I expect to build a reservoir this fall. It will be 1000 or more feet away. Will two-inch pipe be large enough to irrigate one or two acres of garden; light, gravelly soil?—Subscriber, Santa Maria.

The subscriber leaves out information necessary to an intelligent answer. The distance, 1000 feet. is of course one of the factors which must be known to determine the discharge, but the more important one is the fall from the reservoir to the land to be irrigated. If it is almost on a level the two-inch pipe will not be sufficient. If the fall is very great it might supply sufficient for several acres.

Warts on Teats.

Please give remedy for warts on cow's teats.—Subscriber, Tulare.

Apply warm water until all loose and dandruffy skin is removed. Then put on cold pressed castor oil every day for a week. This will usually remove warts on the teats and udder without any further trouble. A very stubborn one can be removed by the use of butter of antimony. This is a poison and is applied with the end of a feather directly on the center of the wart. Wash it off before milking the next time. Tie the cow up in a stall so she will not lick it off.—M. E. S.

Kerry Cows.

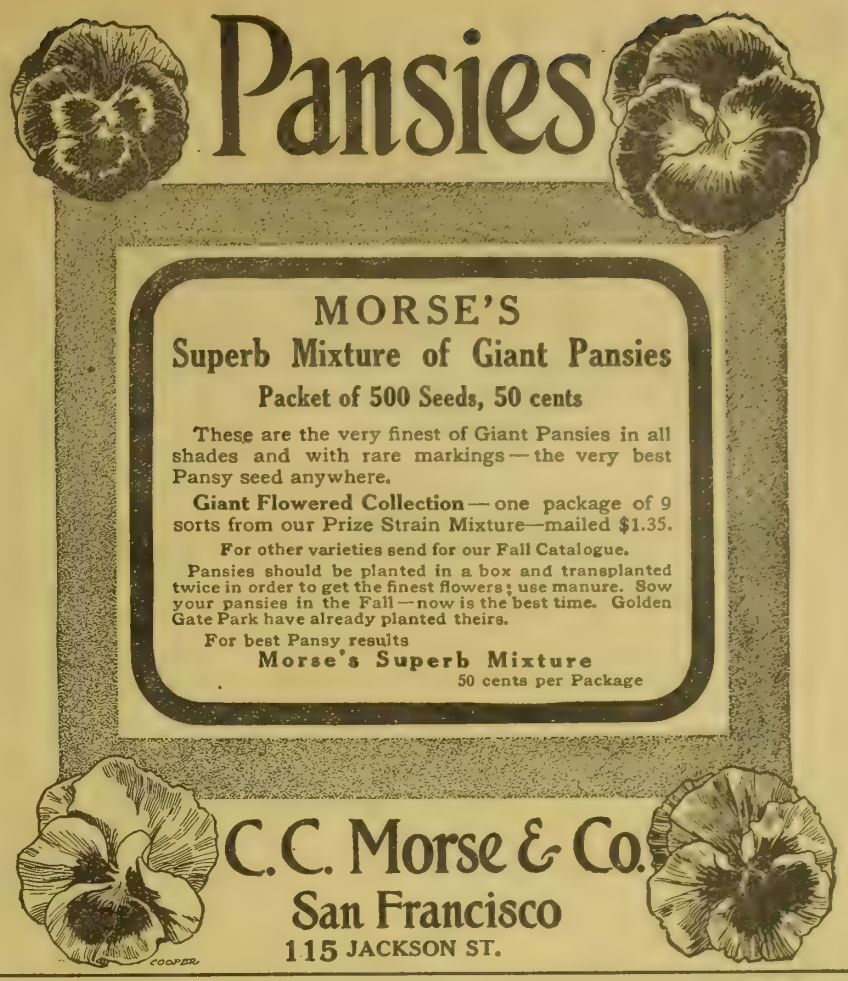
Please give information as to Irish breed of cattle called Kerry.—Subscriber, Irvington.

The Kerry and Dexter cows are liked in Ireland, but I hardly think it would pay you to send for them, as we have other breeds right at hand that are as good in the dairy. These black animals are often quite small, the cows weighing about 550 pounds and the bulls about 800. One of the celebrated prize winning bulls weighed only 400, while in the same show a competitor weighed 1000. The small size has been brought about by the scanty feeding and they are very hardy animals. Record books are kept under the name of the American Dexter and Kerry Cattle Club, Columbus, Ohio.—M. E. S.

Sensitive Teats.

What can be done for cow that has such sensitive teats that she will not stand during milking?—J. I. D., Lemon Grove.

Use a milking tube well sterilized and after taking it out, put into each of the teats that are hard to milk a lead plug to distend them, sterilize the plug by boiling. In sterilizing these tubes and plugs if a piece of thread is tied to them to handle them by and the portion that goes into the teat never handled, the danger of infecting the udder is overcome. Bathe the outside of the udder with boracic or boric acid water. Buy ten cents'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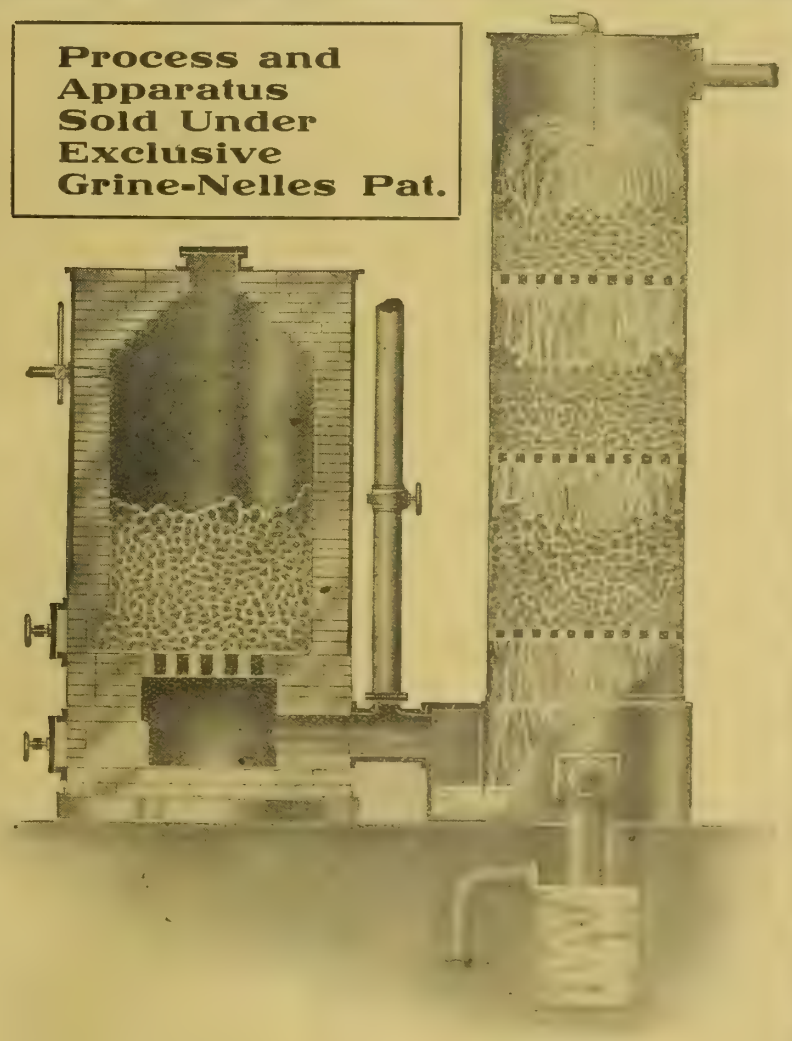

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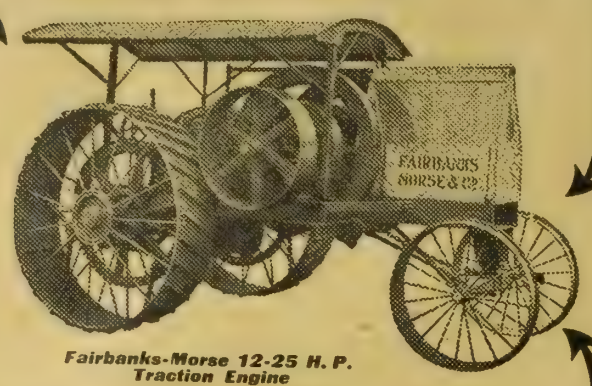

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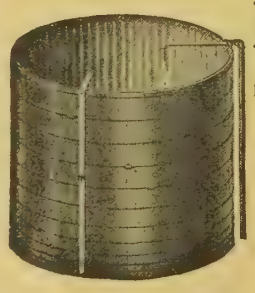

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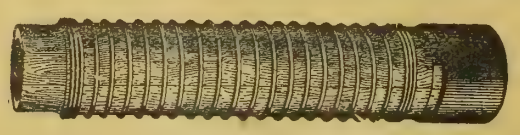

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worth of the crystals and put them into an eight-ounce bottle of hot water. They will dissolve only a 4 per cent solution, leaving the rest in the bottle to have more water added until all is used up. This solution should be used to bathe the outside of the udder twice a day.—M. E. S.

Possibly Work of Gophers.

I send trunk of young orange tree which has been affected with gum disease or some trouble removing all the bark from the surface of the ground to the roots and even on some of the roots.—Subscriber, Escondido.

There was nothing on the trunk of the young tree to indicate gum disease, neither were there any marks of the teeth of gophers, but it looked as if gophers, moles or some small pests had caused the trouble. If gum disease caused it then irrigation must have removed all effects of the gum, as it is soluble in water and flooding around the tree will cause it to disappear. If the trouble is caused by four-footed pests the remedy is obvious; if by gum disease the heavy soil should be removed from the roots, filling in with sand or sandy loam and treating the trunk with neat's foot oil. If the rest of the trees are so seriously affected and have been allowed to rest several months since the injury, the only thing which will save the trees is bridge grafting.

Nightshade Plants.

I send weed infesting our pastures. What is it?—Subscriber, Wendell, Idaho.

This plant was submitted to a botanist and declared to be solanum nigrum or black nightshade. It is an annual and said to be entirely harmless. Children have eaten the berries and enjoyed them and they are often used for pies and preserves.

Tuberculosis.

Please give information as to tuberculin test. Is tuberculin furnished by the state? Can tuberculosis be detected in milk? Is it a fact that the human family can contract the disease from use of milk from tuberculous cows?—Subscriber, Tulare.

The University of California offered to furnish the tuberculin and an instructor to train a class or a group of dairymen in any community on its practical use. These men were in turn to help others test their herds. Address Dr. Haring, College of Agriculture, University of California, Berkeley, for information as to what they are at present offering to do for the dairyman along this line. I consider the test important and I believe, entirely aside from the matter of health, that a dairyman cannot afford to have this disease taking his cows from him in their prime. The financial loss he would regard as very serious if it came in a night like anthrax. Yet it is a very steady drain on his pocketbook. The tuberculin test is reasonably certain if the people using it are observant of the condition of the cow, before injecting. It will not do to take the temperature of the cow once, then inject and take her temperature once after eight hours and pass her as not reacting. The temperature of the cow must be taken often enough and when she is free from any other physical emotions, to find out the normal degree of her body. Cows that feed on the same hay or drink from the same troughs transmit the disease one to the other. While it might be possible to pass it through a wire fence I hardly think it probable. It may at times be detected in milk but usually when there is a lesion in the udder the cow owner detects it and rejects the milk. It will not do to take the position that the dairyman is wilfully selling diseased milk, for he is not any less of a man than other men, and few would sell anything diseased. The usual way the bacilli of tuberculosis get into milk is by manure particles falling into the milk. The manure carries the bacilli often in great numbers. The government reports obtained from Washington are probably the best source of information on the matter of bovine tuberculosis. The human disease is not quite the same but human beings die from the bovine form. The statistics have not been kept very long and are therefore not conclusive in this respect. In children it is said that two per cent are directly traceable to milk. These are the cases where the bowels are the seat of the disease.—M. E. S.

Butter Won't Come.

Cow has been fresh two weeks. We are unable to get butter from the cream. She is fed alfalfa and is apparently perfectly healthy. We have had no trouble along this line with her milk before. After churning two hours the cream is greasy.—Subscriber, San Fernando.

Try ripening the cream more thoroughly before churning. The night before churning put the cream can into a tub of hot water and stir it until the whole mass reaches 85 degrees. Then cover it for a couple of hours with a heavy blanket to retain the heat. Cool down by standing it at the temperature that it is usually kept. Now this warming has to be tried probably once before the exact time it should be held at the higher temperature can be determined. When the cream is ripe for churning it has an acid taste, and when it is dropped in single drops from a spoon held a couple of feet above the vat, it falls on the smooth mass of cream, making for an instant a little pit on the surface. There is only one case on record of a cow whose milk would not churn when the cream was ripened, so I think you will find that this will correct the difficulty.—M. E. S.

Garget.

Cow which freshened in February is troubled with one of her hind teats, milk will not flow, quarter is swollen a trifle though apparently not sore, and there are small, hard lumps in it. Have kneaded and bathed udder with warm water.—Subscriber, Clovis.

This heifer has garget and these cases are sometimes helped by using a milk tube in the weak teat. These cases run their course and often cure themselves when the cow comes in fresh again. When the milk tube is used be sure it is boiled between insertions. Then after using it put into the teat and leave it there until next milking time, a lead plug. The bathing with warm water is right treatment and rubbing the affected quarter with spirits of camphor will assist in drying up that portion of the udder until she freshens again.—M. E. S.

Dried Off Too Early.

I have a cow which I have not dried off on account of making a mistake in time when she will freshen. Four or five days ago I started to dry her off, but find I cannot do so. How should she be handled now? Should I milk her regularly right up to freshening time?

Continue to milk this cow and give her more feed if she is thin. To attempt to dry her now would be to invite trouble with garget. It does not hurt a cow to be a continuous milker if she is given enough to eat. I have had cows that were never dry for nine and ten years. It is impossible to force a cow that is milking four gallons a day dry without destroying her future usefulness, and this class of cows are becoming more and more common.—M. E. S.

Growing Alfalfa.

Our soil is a deep, rich sandy loam with no hardpan. There was no legume crop before we seeded to alfalfa last January; the land had been used for several years only for one crop of winter hay, barley, I think, which was cut, the stubble being turned under in time for next planting. Would you advise using lime or land plaster? If so, about how much per acre and when spread? Also what do you think of a light planting of barley or oats for an additional winter crop? Do you think it wise to disk the alfalfa in the spring? I understand that many fields are kept in good condition for long periods of time by thoroughly tearing up the roots about every three years or so with a drag or harrow. As to fertilizers, do you consider potash and phosphate good? And if so, about what quantity and when, for best results? What about the alfalfa weevil?

Our knowledge of agriculture, like medicine, is built up at first empirically or on the usages that have given results. Then science takes these results and finds out why, and has the

lata to build up into improved ways of helping us out in saving money.

Land plaster helps us out greatly n the San Joaquin Valley and I see lo reason why it should not help your and. It is applied in the fall usually s a matter of convenience, as then he teams are idle. You can try it his fall by measuring off a piece of and two hundred feet by two hundred nd applying five sacks of the gypsum roadcast to it. The rate of using gypsum is about four hundred pounds o the acre. While more does no harm it does not seem to increase the ield greatly. Disking alfalfa is not lone to tear it up but to increase the number of plants to the acre. The lisks are set straight so as not to tear t out, but to split the heads. They re split one way first time. Then he next year these are again split the other direction, so I have taken up alfalfa roots on land that was constantly disked to find as many as eight heads leading down to one central oot. The time for disking is when he ground is wet enough to allow he roots to slip and not to be torn out but sliced readily. I hardly hink you will need potash or nitrogen or other fertilizers at present on alfalfa. State Horticultural Commissioner Jeffrey has placed restrictions on the importation of alfalfa seed from nfected districts. Any pest that starts s at first at its worst and then gradually the plants that are left develop esistance, so in the end the loss is ess than the first ravages would indicate.—M. E. S.

School for Feeble Minded Children.

Is there a state school in California or feeble-minded children? If so, where, and whom can I address for full particulars? Are there any private schools of that kind?—Subscriber, Lemoore.

The Sonoma State Home, formerly known as the California Home for the Care and Training of Feeble-Minded Children, is located at Eldridge, California. The president is C. E. Haven of Santa Rosa, but we suppose the proper person to address for information is Dr. Wm. J. G. Dawson, Medical Superintendent, Eldridge, Cal. We cannot inform you as to any private schools of this nature.

Borer.

What will destroy borers in fruit trees? Do they attack all kinds?—Subscriber, Granite Station.

The best way to destroy the borers is by the use of slender wire inserted into the opening, but the best remedy for borers is never to have them, in other words, use preventive measures. While infesting many varieties of trees, they are scarcely ever found excepting where there has been sunburn or other injury of the bark of the tree. Keep the bark from scalding and in good healthy condition. After severe pruning whitewash the trunks and larger limbs, or even protect with sacks or paper. A mixture of whale oil soap in the whitewash proves beneficial.

Swelled Head.

Please answer in your columns. Some turkeys have swelled head. I have seen one that was nearly blind from swelling. What's the cause. How may it be prevented?—Subscriber.

You will find full answer to this on page 209 Cultivator of August 31. The complaint is roup. The cause is either from taking cold or from lice and from contagion. The cure has been fully given. You may have to lance the swelling if very hard.—Mrs. A. B.

Split Oranges.

A number of my half-grown oranges are splitting at the navel end. What is the cause? Is once or twice a week too much to water orange trees? Also have an orange tree six years old which has never borne. What is the cause?—Subscriber, Granite Station.

There are many theories as to the cause of oranges splitting. Probably the most common and most generally accepted is irregularity of irrigating. However, we have heard this answer given in conventions and institutes when dozens have bobbed up to declare that with absolutely regular irrigation they still have split, but we be-

(Continued on Page 281.)

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10,000 feet	¼-inch	Standard, at	1c per foot
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20,000 feet	¾-inch	Standard, at	3c per foot
36,000 feet	1-inch	Standard, at	4c per foot
20,000 feet	1¼-inch	Standard, at	5c per foot
30,000 feet	1½-inch	Standard, at	6c per foot
50,000 feet	2-inch	Standard, at	8½c per foot
10,000 feet	2½-inch	Standard, at	14c per foot
15,600 feet	3-inch	Standard, at	17c per foot
15,000 feet	3½-inch	Standard, at	19c per foot
20,000 feet	4-inch	Standard, at	24c per foot
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20,000 feet	6-inch	Standard, at	45c per foot

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1,000 feet	10-inch	Diamond B. X. 40-lb. Special Casing, good as new	$1.00 per foot
1,000 feet	11⅝-inch	Casing, at	$1.00 per foot
1,000 feet	9⅝-inch	Casing, at	75c per foot
2,000 feet	7⅝-inch	Casing, at	45c per foot
0,000 feet	5⅝-inch	Casing, at	32c per foot
30,000 feet	4-inch	Casing, at	19c per foot
30,000 feet	3½-inch	Casing, at	16c per foot
20,000 feet	3¼-inch	Casing, at	15c per foot
25,000 feet	3-inch	Casing, at	14c per foot
50,000 feet	2-inch	Casing, at	6½c per foot

WATER PIPE—Riveted Dipped Pipe

10,000 feet	24-inch	Riveted Pipe, dipped, good as new	30c
10,000 feet	12-inch	Riveted Pipe, dipped, good as new, 10-guage	35c
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10,000 feet	8-inch	Riveted Pipe, dipped, good as new, 16-guage	25c
10,000 feet	6-inch	Riveted Pipe, dipped, good as new, 16-guage	20c
10,000 feet	4-inch	Riveted Pipe, dipped, good as new, 16-guage	10c

20,000 feet of 14, 12, 10, 8, 6, 4-inch damaged Riveted Pipe, used for drain and culvert pipes for under streets, at reduced prices.

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20,000 feet 3, 3½, 4-inch Pipe, cut to 16, 18 or 20-foot joints, for telephone poles, fitted up with cross-arms for that purpose.

We are offering special prices to save handling this pipe. We will fill your order on any amount or size of pipe. Small orders will secure the same attention as large ones. We carry a full line of pipe fittings at reduced prices. Mail orders promptly filled. Check or money orders received. Call and examine this pipe at our plant.

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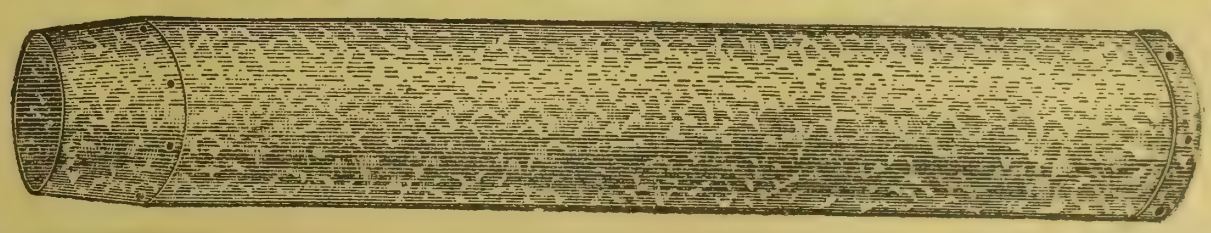

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Brighton Herd of Berkshires won the following prizes at Fair 1911: Silver cup for best herd of Berkshires, silver for reserve champion sow, first and third for sow under one year and third on boar under six months. Registered stock for sale. H. L. Murphy, Perkins, Sacramento Co., Cal.

Stallions for Sale—Acclimated animals. All harness broken, sound and gentle. Leader 40637. Dapple gray, 8 yrs. old. Ladoga Leon, 66619, 2 years old. Dark gray. Dam weighs a ton. Liberty 74310. Black yearling. These three are registered in the Percheron Society of America. Atwood, bay carriage stallion, 2 yrs. old. Solid color. Sired by Athadon, 1st dam by Junio, son of Electioneer. McKinney Don, 2 yrs. old. Solid bay with black points. Sire Stanford McKinney. 1st dam Belladonna, standard by trotting record. 2nd dam by Athaneer. Both well broken to buggy. Minnewawa Stock Farm, Fresno, Cal.

Percheron Stallion For Sale—A registered, two-year-old, black Percheron, sound and gentle, weighs now 1650. Will deliver him at your town for $1000. He will pay for himself first season. Address Chas. F. Thompson, R. F. D. 3, Bakersfield, Cal.

Cattle—Help us stock our large ranch—pay in cash or in installments. Share in the large profits. Interest guaranteed. Write for free booklet. C. E. Reed, Secy., 710 Grosse Bldg., Los Angeles, Cal.

Grapewild Farm Herd of thoroughbred Berkshires. State fair prize winners. Boars and sows of all ages, unrelated. Address A. B. Humphrey, Mayhews, Sacramento Co., Cal.

Three Half Bred Toggenburg Swiss Milk Does, sired by "Bismarck," also one three-quarter bred doe kid, 6 months old. Price $20 each, or $75 for all. Full description on application to W. E. Hyer, Hemet, Cal.

For Sale—Pure bred New Zealand and Belgian rabbits for breeding purposes. Large stock continually on hand. Prices reasonable. We solicit your correspondence. Mattjetscheck & Crane, Banning, Cal.

Beautiful White Saanen Toggenburg Buck by Andreas Hofer, three months, looks like six. Pedigree, record stock. Price $25, or trade for doe. B. Stocker, San Luis Obispo, Cal.

Three Holstein Friesian Bulls, splendid young animals, for sale. Well marked and subject to registry. Write at once to Geo. C. Roeding, Fresno, Cal.

Belgian Hares—Fine, healthy breeding stock, for sale cheap. Write for your wants and prices. J. A. Reinhart, Hollister, Cal.

Dairy Floating Thermometers and all kinds of supplies for the dairy at Guy F. Kelsey Co., 108 E. 8th St., Los Angeles. Phone Sunset Main 7406.

For Sale—Twenty head registered Shorthorn bulls and heifers. Best breeding. H. L. Murphy, Perkins, Cal.

Toggenburg-Saanen bucks, also good milk goats bred to registered Toggenburg buck. Mrs. J. Lenert, Chino, Cal.

WANTED

Local Representative Wanted—Splendid income assured right man to act as our representative after learning our business thoroughly by mail. Former experience unnecessary. All we require is honesty, ability, ambition and willingness to learn a lucrative business. No soliciting or traveling. This is an exceptional opportunity for a man in your section to get into a big paying business without capital and become independent for life. Write at once for full particulars. Address E. R. Marden, Pres. The National Co-Operative Real Estate Company, L 448, Marden Building, Washington, D. C.

Wanted—About 200 good White Leghorn pullets. State age and price. L. W. Holtzclaw, Lakeside, Cal.

Wanted—By young man, position as manager or foreman on fruit ranch. References. Address Box 61, R. F. D., Aptos, Cal.

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Have You a Cow?—Have you a creamery? Have you a cheese factory? Write us. Everything used in either a dairy, creamery, cheese factory, or for handling milk, cream, butter or cheese. We are in a position to quote you prices on entire creamery or cheese-making outfits. We make a specialty of only the latest and best sanitary machinery and supplies. Send us a list of what you want, and we will quote prices which we feel certain will interest you. O. J. Weber Co., 225-227 East Sixth St., Los Angeles, Cal.

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Full line of dairy supplies. Come in, phone or write. Generous sample of Prosperity Washing Powder given on request. 106 East Eighth St., Los Angeles, Cal. Phone Main 7496.

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Fine Line of Navels, Valencias and Eureka Lemons for delivery spring of 1911. Contract now and get the first choice. The King Citrus Nurseries, Whittier, Cal.

Planters invited to inspect our strictly high grade citrus trees. Robinson Citrus Nurseries, San Dimas, Cal. P. O. P. E. Ry. to Valley Center, four blocks north.

Orange, Lemon and Grapefruit Trees, all first class stock. Special prices to parties planting groves. Edward A. Carvel, 1454 Oak St., Glendale, Cal.

For First Class Valencia and Navel Orange Trees and Eureka Lemons, see A. G. Snow, Oxnard, Cal.

Low Prices on advance orders of deciduous fruit trees. Ballou's Nursery, Pasadena, Cal.

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For Sale—Agricultural implements, vehicles. Splendid values, lowest prices, liberal credit. See us without fail before buying. Catalogs mailed out of town customers. Write us describing what you wish to buy. When in the city a personal call will show the largest stock and assortment in the Southwest. Arnott & Company. Established 1892. 112-118 South Los Angeles Street, Los Angeles.

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DAIRY RANCH
FOR SALE.

430-acre river ranch of deep heavy loam, with good improvements, including fully equipped dairy; 110 acres of fine alfalfa, producing from four to five heavy crops; 60 acres of fertile upland, suitable for fruits, berries and alfalfa; 130 acres fine timber and feed land; 130 acres cleared bottom land, raising large crops of grain, all suitable for alfalfa or fruits.

This property is all well fenced and lies within 1½ miles of railroad station with ten passenger trains arriving daily. For price and terms apply to G. E. Brinkerhoff, owner, Modesto, Cal.

For Sale—A 20-acre farm for $20 cash and $20 a month; possession now; $90 to $125 per acre; your crops pay for the land; rich, level land for alfalfa, oranges, almonds, grapes, cows, chickens; abundance of ditch water for irrigation for $1 an acre a year. Where else can you get this? In Oakdale Colony, near good town and railroad station. Climate delightful. T. Wiesendanger, 207 S. Broadway, Los Angeles, Cal.

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350 acres A-1 citrus, grain or stock ranch, 7½ miles south of Escondido, in line of new electric road now building, half mile from boulevard. Five-room house, barn, sheds, etc. Two orchards. Two good wells, two springs. About 225 acres under cultivation, about 75 more can be plowed, balance pasture. This is a bargain. Address Conrad & Company, Escondido, Cal.

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THE ORANGE GROVE MAN.

Large list of orange groves in best districts. Seven years' experience in growing oranges.

A. W. RICHARDS,
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Apple Orchards—Large and small, in the only apple producing section in California. The greatest section west of Missouri River. Write for booklet. Geo. W. Sill & Co., Watsonville, Cal.

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For Sale—Five acres, two miles south of Monrovia, half set to deciduous fruits; plenty of mountain water. Forty acres at Corcoran, five-room house. B. F. Houser, Monrovia, Cal.

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FARM LANDS WANTED.

WANTED—COUNTRY PROPERTY.

If you want big money,

List your property with us.

We sell

Farms and Ranches, either in fruit, general cultivation or unimproved.

We want

Unlisted property, to which we give our personal attention.

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Write. Phone. Call.
Sunset Investment Co., 418 Union Trust Bldg., Los Angeles. Phone Home F 2310.

Farms Wanted—We have direct buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property Free. American Investment Association, 12 Palace Bldg., Minneapolis, Minn.

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For Sale — Second-hand windmills, tanks, pumps, engines.

OUR SPECIALTY—NO WORRY, MATERIAL GUARANTEED.

Windmill outfits, 8, 10, 12 ft. sizes.

GASOLINE AND DISTILLATE ENGINES. Have four great big snaps, as follows: 2 H. P. with jack and pump complete, $69; 4 H. P. Stearns engine; 5 H. P. R. & V., no better made; 6 H. P. Fairbanks. Another 26 H. P. Foos, cylinder and piston, good as new, $390. Can you beat it? 25 H. P. engine and hoist, brand new, runs perfectly, cost $1,200, for $600 cash. Will take smaller engines, horses or auto as part payment on the larger ones.

TANKS.

100 second-hand tanks, all sizes; no worry, save you half; some new ones at half price.

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200 ft. 10 inch pipe, do for flume, $16; 4 inch casing at 14c, 6 inch casing 29c, 8 inch casing 40c; 300 gallon rendering kettle, $10; 2 H. P. steam engine and small boiler; 2 ton truck, $25; 2 horse tree sprayer; 2 circular saws; windlass; stock tanks.

Outside shipments receive personal attention. Our prices are the very lowest good serviceable material can be furnished for. Get other prices, then compare material and prices with us.
Demmitt Co., 120 N. Main St., Los Angeles.

Walnut Growers, Attention—I have a Meier No. 2 walnut huller for sale, but little used. I had to dig up my trees is reason for selling. It is a money saver, does good work. Less than half price, $30 f. o. b. San Diego. Address, N. P. Eisenmayer, Nestor, Cal.

For Sale—11 H. P. White & Middleton Gas Engine, thoroughly overhauled. Baille & Brandt Co., 943-945 N. Main St., Los Angeles, Cal.

For Sale—32 H. P. Fairbanks-Morse Gas Engine. Must be sold. Machinery Exchange, Main & Bruno Sts., Los Angeles, Cal.

POULTRY SPECIALITIES.

Special Incubator Offer—We are overstocked on 130-egg size Success Incubators. We offer 50 of them at $10 each as long as they last; regular price $14. Order now. E. E. McClanahan Incubator Co., 112 East 8th St., Los Angeles, Cal.

POULTRY

How to Make Money—Mrs. A. Basley's Latest Poultry Book is without exception the most wonderfully complete manual on the subject of successful poultry management ever written. The secret of how to raise every turkey hatched and the "Basley Formulas," now published for the first time, are worth many times the price of the book. The "Western Poultry Book" is a practical book by a practical woman. Price $1. Address Mrs. A. Basley, Box 77, Venice, Cal.

The Goodacre Strains—Our Red chicks are hatching strong, only $12 per 100. Do you want Ancona chicks at $15 per 100 or 18c each? How about yearling males at $3 for Leghorns and Anconas; $5 to $7 for R. I. Reds and Buff Orpingtons? Eighteen Leghorn hens and cock for $20; R. I. Red young cock and four hens, $12; Buff Orpington young cock and four hens, $14. Write for our summer price list. Goodacre Bros., Compton, Cal.

Standard Poultry Yards—Are booking orders for eggs from the best Cook or Kellerstrass White Orpington chickens on earth, from $2.50 to $5.00 per setting and from $15.00 to $30.00 per hundred. Baby chicks 50c each. Six-weeks-old chicks $1.00 each. E. C. Worden & Son, 4004 University Blvd., San Diego, Cal.

32 Carneaux Pigeons and 8 Maltese, $15 per doz. Mostly all mated. Fine thoroughbreds sacrificed. Need room for White Holland turkeys. Mrs. Hocking, Guasti, San Bernardino Co., Cal.

For Sale—Pullets, cockerels and yearling White Orpingtons (Cook strain), Black Minorcas (Northrup strain), White Minorcas, R. I. Reds (Tompkins strain), pure bred. C. U. Chamberlin, Los Gatos, Cal.

Pigeons, Pigeons! Write immediately for information and prices. Fine Runts and Crosses. Selling to make room for Carneaux. Mrs. Ernest Wood, Box 465, Oakdale, Cal.

Day-Old Chicks, Barred Rock and White Leghorns, good laying strain. Order now to insure early fall delivery. The Fairmount Hatchery, 29 B Rural No. 1, Santa Cruz, Cal.

Poultry Wanted—We pay the highest market price for all the local poultry we can get, no matetr how large the quantity; also fresh ranch eggs. We remit immediately. Allaway & Layton Co., 607 E. Third St., Los Angeles, Cal.

Orpingtons—High class Buff and White. Bred to lay from prize winning stock. 500 pullets and cockerels for sale. Reasonable prices. Will mate pens with unrelated males. Write Mrs. S. Swaysgood, Route 1, Healdsburg, Cal.

Just Hatched White Leghorn Chicks every month, from select, heavy laying, mature stock. No pullet eggs used. Lodi Hatchery, E. Elm St., Lodi, Cal.

White Leghorns—Buff Orpingtons. Bred for beauty and great egg production. Grand lot of both old and young stock for sale. Prices reasonable. Write your wants. Model Poultry Farm, Box H, Irvington, Cal.

Hicks Jubilee Hatchery, now booking orders. Write us your wants. We use eggs from first-class stock only. Try us. W. J. Hicks, Petaluma, Cal.

For Sale—Now is the time to place your order for baby chicks, all breeds, 20,000 capacity. Can fill order, large or small. Carl Matson, Inglewood, Cal.

Western Hatchery—We are booking orders for day old chicks hatched from well selected, well bred stock. Write for prices and terms. Western Hatchery, —Western Ave., Petaluma, Cal.

For Sale—Barred Rock Cockerels about six months old, also day old chicks hatched to order. Enoch Crews, R. No. 1, Santa Cruz, Cal.

For Sale—500 White Leghorn Chicks, 2 to 4 weeks old; also orders booked for fall hatched chicks. The Fairmount Hatchery, 29 B, Rural No. 1, Santa Cruz, Cal.

The Luedkes—Incomparable R. I. Red high record layers. Eggs by the hundred $6.00. Fancy matings $3.00 for 15. P. O., Anaheim, Route 1.

Thoroughbred Black Minorca Cockerels, $2 up; eggs, $1.50 per 13. Mrs. W. L. Bowland, Santa Ana, Cal.

Rose Comb Black Minorcas, nine years line bred. Stock and eggs in season. Eleanore Minorca Farm, R. D. 1, Los Angeles, Cal.

The Great Navajo Strain of Barred Rocks—Eggs $3, cockerels $3. E. E. Hardy & Son, Santa Ana, Cal.

For Sale—Kellerstrass Crystal White Orpington eggs, $2 per 13. R. L. Warren, R. F. D. 1, National City, Cal.

For Sale—Fine Toulouse geese for breeders. D. S. Willey, Damask Ave., N. Inglewood, Cal., R. D. R. No. 1.

DUCKS

We have a few genuine "Rankin" strain Mammoth Pekin drakes to spare that will add a pound each to your next lot of ducks. Grand big fellows, fit to show. Price two to five dollars each. Eggs from our best pens, $10 per hundred, $2 setting. Long Beach Poultry Ranch, Long Beach, Cal.

Indian Runner duck eggs from stock carefully bred for heavy layers. Price $1.50 per dozen. Drakes for sale. Mrs. Fred Chester, Santa Rosa, Cal., Route 2.

White Indian Runner, Fawn Indian Runner, Aylesbury and Buff Orpington Ducks, stock and eggs. Catalog free. Caldwell Bros., Los Angeles, Cal.

Indian Runner Ducks—Pure fawn and white. Great egg producers. Limited number for immediate delivery. $5 per trio. E. R. Fulkerson, Claremont Farm, Galt, Cal.

FOR RENT

Imperial Valley Fruit Ranch to Let—160 acres in early table grapes, apricots, alfalfa and cotton; 2 miles from county seat. Tenant must have experience, and $3000 capital to furnish labor. Address Horticultural Dept., Box 2, El Centro, Cal.

Farm to Let—Two orange groves, 10 and 15 acres, two or three years to right party. Converse, Glendora, Cal.

HORTICULTURAL PRINTING

Catalogues for the seed and nursery trade, the live stock and poultry industries, are a specialty with us. Two thousand illustrations to select from. Write for prices and samples. The Kruckeberg Press, 237 Franklin St., Los Angeles.

MISCELLANEOUS

60 H. P. 4-CYLINDER AUTOMOBILE. Engines guaranteed mechanically perfect. Wheel base 120", tires 4½x36". Was bought in spring of 1909; cost $4000. Has first paint and good tires, good transmission, gears first-class. This is a roadster made for heavy roads. Would make fine desert car or truck. Was taken in real estate deal. Positively no use for it. Will take $675, or would trade for hay, horses, farm machinery. What have you? On account of trip to Europe, I am leaving this car with Demmitt Windmill Co., Los Angeles, who will close any deal in my behalf.

Free—"Investing for Profit" Magazine. Send me your name and I will mail you this magazine absolutely free. Before you invest a dollar anywhere, get this magazine—it is worth $10 a copy to any man who intends to invest $5 or more per month. Tells how $1,000 can grow to $22,000; how to judge different classes of investments; the real power of your money. This magazine for six months free if you write today. H. L. Barber, Publisher, R. 430, 28 W. Jackson Boulevard, Chicago, Ill.

ORNAMENTAL PLANTS

Ahuacate Seeds, Avocado, Alligator Pear, Persea gratissima. Price reduced to $3.75 per 100 and $33 per 1000. Germination guaranteed if our directions are followed. Montarioso Nursery, Box 1500, Santa Barbara, Cal.

Plants of all kinds, wholesale and retail, at Las Palmas Greenhouses, Palo Alto, Cal. Contracts solicited. Let us know your needs at once.

RARE PLANTS

Wild Plant Improvement Gardens, Santa Ana, California. Newton B. Pierce, proprietor. Rare choice ornamentals and new fruits from all lands.

SEEDS AND PLANTS

Wanted—10,000 Citrus Trifoliata stock for budding. Please state age, size and price. Montarioso Nursery, Box 1500, Santa Barbara, Cal.

Holstein Cattle
The Most Profitable Dairy Breed
Illustrated Descriptive Booklets Free
Holstein Friesian Ass'n of America
F. L. Houghton, Sec'y, Box 120, Brattleboro, Vt.

Thoroughbred Poland China Swine
Barred Rock Poultry
High Grade Stock of Best Strains.
Young Stock for Sale.
M. Bassett ***Hanford, Cal***

JOHN LYNCH
Breeder of Registered **Shorthorns**
MILK STRAIN
Petaluma Cal

PESTS.

Some folks there are
I'd like to swat
And shed their gore
Upon the spot.

The worst is he
Who wakes at dawn
And hastens forth
To mow his lawn.
—Milwaukee Sentinel.

Some folks there are
I'd like to kill,
And some sweet day
By heck, I will!
The fiend whose brain
I'd toss like chaff,
Is he who runs
That phonograph.
—Los Angeles Express.

A POSER.

Johnny—Grandpa, do lions go to heaven?

Grandpa—No, Johnny.

Johnny—Well, do you ministers?

Grandpa—Why, of course. Why do you ask?

Johnny—Well, suppose a lion eats a minister.—Life.

NO DIFFICULTY.

"I shall not marry," said a conceited young man, "until I find a woman exactly opposite to myself." "Well," replied his sister, "you know plenty of amiable, intelligent girls."

POSTAGE STAMP MUCILAGE.

The mixture used on the United States postage stamps is stated to be as follows: Two parts of dextrin are dissolved in one part of acetic acid and five parts of water on a water bath, and after solution, one part of alcohol is added.

Flubdub—Well, I suppose you were up bright and early this morning?

Roundabout—No, sir. I am never up bright and early. If I am up early I am not bright, and if I am up bright I am not early.—Puck.

Milk Coolers, all sizes and prices Guy F. Kelsey & Co., 106 East Eighth St., Los Angeles, Cal.

lieve that if the irrigation is very thorough and the water is carried to the lower depths and the irrigation fairly regular, the percentage of split fruit will be low. As to the six-year-old tree not bearing, we would suggest rather deeper irrigation than usual and surely not so frequent as mentioned by the inquirer. Once every thirty days or once every six weeks on most soils is sufficient, but one must consider his own soil conditions and water accordingly. Deepest cultivation, together with fertilization might bring this tree out. An additional safeguard is the application of from one to three pounds of nitrate of soda at blossoming time or slightly before.

Pears Not Bearing.

Have a pear tree six years old, heavy with bloom every spring, but has never yet borne any fruit. Tree is vigorous.—Subscriber, Granite Station.

This may be because the variety is not suitable to your locality. Again, it may be because the flowers are imperfect and require pollen from another tree blossoming at the same time. The only way this can be decided is to plant some other variety alongside.

Planting Strawberries.

What is the best season of the year for planting strawberries, raspberries, or other small fruits? If set at this time, will they have to be covered during the cold season?—Subscriber, Granite Station.

January is probably the best month for planting strawberries. December to the first of March is best for bush fruits. If the berries are to be planted in a section where, as the subscriber writes, an orange tree has grown to be six years old, no thought need be taken as to covering during the winter. The writer has planted strawberries in ground which had been crusted by severe frosts during the night, yet they made fine growth and gave a small crop the first season.

Evergreen Vines.

What vine can be used which is green all the winter and is hardy enough to stand frost?—J. B. E., Granite Station.

The English Ivy will probably be as acceptable as any and is perfectly hardy. The only objection to it is its slow growth.

Planting Walnuts and Pears.

I have land in the San Luis Rey Valley three miles from the ocean, with abundance of irrigating water. Soil sandy, water five or six feet from the surface. Will walnuts and pears do well on this land?—G. A. O., Oceanside.

These conditions seem almost ideal for walnuts and pears, if the case is stated correctly. The water level should be reasonably regular. If it stands at five or six feet the year round, all will be well, but if during the wet season it rises to within two or three feet of the surface and remains during a long period, it would not afford ideal conditions for tree growth, especially for walnuts.

Anonymous.

If "Subscriber," Laton, will send us his name and address, the information he asks will be mailed, as it has appeared in a recent Cultivator. We call attention to the last statement in the notice at the head of this department: "Unsigned communications receive no attention."

Legal

Edw. L. Payne, attorney, 301-304 Douglas Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Payne is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Farming Implements Exempt.

What personal farm property, tools, etc., also household goods, can a farmer hold from seizure for ordinary open accounts or court judgments relating to them? Can a wife hold personal property that was her own, for instance, a driving team?—J. K., Imperial.

The farming utensils or implements of husbandry of the judgment debtor, not exceeding in value the sum of one thousand dollars; also two oxen, two horses, or two mules and their harness; one cart or buggy and two wagons, and food for such oxen, horses or mules, for one month; also, all seed, grain, or vegetables actually provided, reserved or on hand for the purpose of planting or sowing at any time within the ensuing six months, not exceeding in value the sum of two hundred dollars, and seventy-five beehives; one horse and vehicle belonging to any person who is maimed or crippled, and the same is necessary in his business. Necessary household, table and kitchen furniture, including one sewing machine, stove, stove pipes and furniture, wearing apparel, beds, bedding and bedsteads, hanging pictures, oil paintings and drawings drawn or painted by any member of the family, provisions and fuel actually provided for family use, sufficient for three months, and three cows and their sucking calves, four hogs and their suckling pigs, and food for such cows and hogs for one month; also one piano, one shotgun and one rifle. No real estate is exempt unless it be homesteaded, or unless it is exempt under the United States laws for debts incurred prior to patent, or by some special provision of the state law. A wife can hold her separate property as against the creditors of the husband, where she has not joined in incurring the debt.—E. L. P.

Transferring Judgment.

Is judgment obtained in Wisconsin collectable in California? Is the process of transferring such judgment complicated?—B. D., Lindsay.

Suit can be brought on a foreign judgment in this state. The procedure is not complicated. If you intend to establish your judgment here, you should get a certified copy of the judgment from Wisconsin as a basis for your suit here.—E. L. P.

Rent for Meter.

The water company charged me $15 for meter. After buying and paying for this meter, can the city water company compel me to pay a flat rent of 75 cents per month for use of the meter on each monthly bill? Does the company own the meter after receiving full payment for same?—Subscriber, Eagle Rock.

If the $15 you paid was the purchase price of the meter, it belongs to you, and the company has no right to charge you rent for it, but the custom is for the $15 to be considered merely as a deposit for installing the meter, and not as payment for the meter.—E. L. P.

Distribution of Water.

We bought our water right with our land, and it goes only with the land for which the certificate calls. When the water was short the manager has ruled that the water goes only to those having alfalfa. Is this acording to law, or is he liable to a suit for damages by depriving others of their share? The water company is maintained by assessments, each paying the same according to acreage, no matter what is grown on it.—F. G., Greenfield.

The manager has no right to discriminate in favor of land in alfalfa, unless he is given that right by some provision in the by-laws, or in the charter, or by some document to which the stockholders have consented. If the manager is acting arbitrarily and without any authority, he is liable in damages. If he is acting under direction of the board of directors, and they in turn are acting without authority, they would be liable for damages. This is presuming that each stockholder, by virtue of the charter, or by-laws, or other agreement, is entitled to water in turn, or at stated periods, or to a certain quantity, upon demand.—E. L. P.

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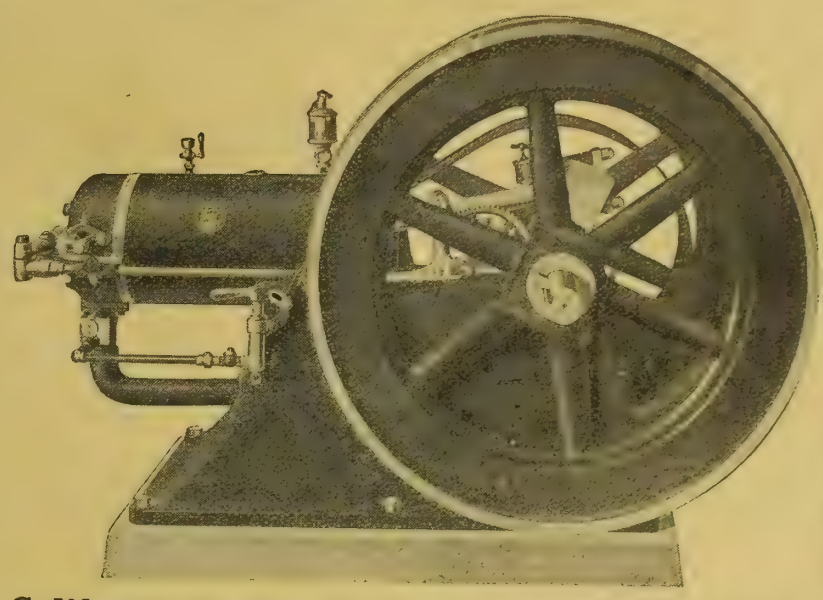

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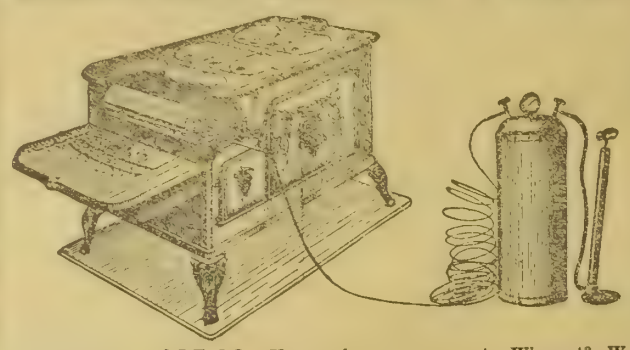

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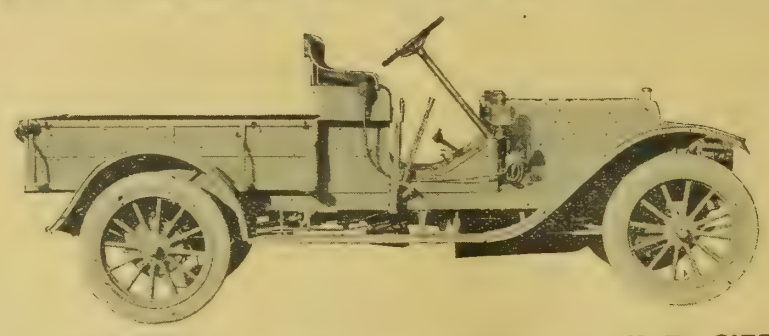

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Household Department

A SONG OF THE PLOW.

From Egypt behind my oxen with their stately step and slow
Northward and East and West I went to the desert sand and the snow;
Down through the centuries one by one, turning the clod to the shower,
Till there's never a land beneath the sun but has blossomed behind my power.

I slid through the sodden ricefields with my grunting, hump-backed steers,
I turned the turf of the Tiber plain in Rome's Imperial years;
I was left in the half-drawn furrow when Coriolanus came
Giving his farm for the Forum's stir to save his nation's name.

Over the seas to the North I went; white cliffs and a seaboard blue;
And my path was glad in the English grass as my stout red Devons drew;
My path was glad in the English grass, for behind me rippled and curled
The corn that was life to the sailor men that sailed the ships of the world.

* * * * *

The sun of the Southland called me: I turned her the rich brown lines
Where her Parramatta peach trees grow and her green Mildura vines;
I drove her cattle before me, her dust, and her dying sheep,
I painted her rich plains golden and taught her to sow and reap.

From Egypt behind my oxen, with stately step and slow,
I have carried your weightiest burden, ye toilers that reap and sow!
I am the Ruler, the King, and I hold the world in fee;
Sword upon sword may ring, but the triumph shall rest with me!

—Country Gentleman.

BOYS MUST BE BOYS.

By Gertrude M. Neil.

Mrs. Rose was quite surprised to see the chubby face of Jack Ingram, a sturdy boy of ten, when she answered the knock at the side door.

He was a neighbor, living three doors away, and he did not often bother her, as she did not encourage intimacy between her own boy and this same Jack Ingram.

It was an attractive little face—round, rosy, and just a little bit dirty. The uncovered head looked as if it had not been combed since morning.

"Say, Mrs. Ross," he stammered, hesitatingly, as he twirled his little cap 'round and 'round on one hand, "would you mind tellin' a fella why you said what you did about me to Mrs. Brown when you passed over the bridge and I was catchin' pollywogs in the creek? You know you said, 'If that boy was mine he would break my heart!'"

Mrs. Ross' face grew very red, and she did not know what to answer. Seeing her confusion, Jack continued: "You needn't mind tellin' me one bit, for it was the funniest thing—mother and me was havin' a chummy talk out by my rabbit pen this morning, and I jist happened to say to her I was glad Cliff Ross' mother wasn't mine. So you see you needn't feel bad about what you said. I jist happened to hear you say that to Mrs. Brown, and it made me wonder if my own mother saw anything wrong with me and didn't like to tell a fella. Thought I'd jist ask you, so I'd know. I wouldn't like my mother to be disappointed in me, you know."

"And pray why wouldn't you like me for a mother?" asked Mrs. Ross, slightly piqued, for she prided herself on being a model mother and having the neatest-dressed boy in the town.

"Well, you tell me fust why I'd break your heart, and I'll tell you why I wouldn't like you for a mother," answered Jack, with all a small boy's love of making a bargain.

"Well, Jack," said Mrs. Ross, sitting down on a chair on the veranda, while Jack took a seat on one of the steps, "I just couldn't stand it if Clifford puddled around in the mud like you do, and climbed trees, and into barns, and all those things. Why, it must keep your mother's nerves in an awful state! And she must be darning all the time. You never keep a hat on your head, and you're freckled and burned; and you go swimming in the creek, and go home with your boots strung around your neck oftener than with them on your feet. Why, I would be frightened to death if Clifford did some of the things you do!"

"Is that all?" and a relieved look brightened up the grimy little face. "If that's all, why, mother don't mind them things much."

"You see, when I puddle in the mud it's for speciments," he confided. "Oh, yes," as Mrs. Ross looked incredulous, "the pollywogs I was gettin,' me and mother is goin' to keep in a big dish of water, and watch 'em turn into frogs. She says first they get the'r front legs, then the'r hind ones, 'nd then the'r tail drops off, 'nd I can hardly wait to see 'em. 'Nd look here," he continued, and forgetting for the moment to whom he was talking, he pulled a dirty handkerchief out of his pocket and, carefully untying it, showed her a huge black caterpillar. She shivered, but Jack failing to notice the shiver, handled the caterpillar lovingly. "Mother and me will look at him with daddy's magnifying glass tonight," he said, 'en look it up in one of daddy's boks."

"Cuckoos and orioles like these to eat," he informed her. "I guess it's the custard inside 'em. Mrs. Ross shuddered again.

"Where's Cliff?" he asked; "he'd like to see this fella."

"You mean, Clifford," answered Mrs. Ross, stiffly. "He's away on an errand, but I hardly think Clifford would care to handle such a thing as that."

"Oh, yes, Clifford; but you know he likes us fellas to call him 'Cliff, old man.' 'Nd oh! yes, he likes bugs 'nd grubs 'nd little snakes 'nd things. He gets me to keep some for him sometimes, 'cause he says you don't like 'em 'round. So I keep 'em for him, 'nd he jist looks at 'em when he gets a chance."

"You are a funny boy, Jack," sighed Mrs. Ross. "You haven't yet told me why you wouldn't like me for a mother," she continued, inquiringly.

"Well," said Jack, sizing her up, "it isn't because you don't look nice, for you're a real pretty woman to look at, but you see a fella likes his mother to be chummy, and not to be awful particular.

"Now you keep Cliff—Clifford, I mean—awful nice 'nd clean and dressed up, 'nd of course he does look nice; but some of the boys call him sissy, 'nd he doesn't like that. 'Nd he does look so lonesome sitting on the bank when the rest of us fellas go in for a swim; 'nd when we climb trees to look into birds' nests we have to tell Cliff how many eggs there are 'nd what color, 'cause he darsen't climb the trees 'cause he might tear his clothes or scratch the leather all off his shoes.

"He never can go barefoot, 'nd he don't get strong like me. Why, see I could lick Cliff in ten jerks of a dead lion's tail," he said, as he swelled out his little chest and doubled up his grimy fists. "Only I don't," he hastened to say, smiling on her reassuringly, as he noticed her horrified look.

"Yes, Cliff is a good sort if he didn't have to be dressed up all the time. He shares everything he gets with the rest of us, 'nd he's game; you can't make him cry.

"My mother says maybe I'll be a science master at the high school, like father used to be before he died; so she lets me learn all about bugs 'n things," he told her, speaking softly.

"Well, I must be goin' home. Mother'll be looking for me. I'm awful glad there isn't anything wrong about me but the climbin' 'nd the dirt for I'll grow out of that, mother says. Good-bye, Mrs. Ross; tell Cliff to come over and see the baby pigeons I've got—just hatched." He jumped the fence instead of opening the gate, and was off like a flash.

Mrs. Ross' feelings were mixed, and

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Trinidad Lake Asphalt

she did some thinking, with the result that Clifford appeared among the "fellas" the next Saturday afternoon in blue overalls and bare feet, and had the time of his life.—Christian Guardian.

TESTED RECIPES.

We give below two recipes which have been tested and found to be most excellent. The first for brown bread is furnished by Kathryn H. Meeder at the head of the restaurant service of Jevne's Store in Los Angeles. She vouches for this brown bread recipe that it is one of the best she has ever tried, and it looks as if it would be an easy one to test. The baking tins of baking powder cans certainly are easily supplied. The idea of placing in oven in pan of water is to partially steam as well as bake the bread.

The next recipe for clam chowder has been found most excellent. It is furnished by Mrs. F. D. Vroman of Los Angeles. It is likewise very simple and has had a test of several years.

We hope these tested recipes will bring forth others along same or other lines.

Brown Bread.

One quart Graham flour, 1 teaspoon baking powder, 1 scant teaspoon salt mixed into flour. In a separate dish put 1 cup molasses, 1 cup warm water, 1 cup sour milk or buttermilk, with teaspoon soda dissolved in the milk. Stir all together and pour over Graham flour mixture. This will make four 1-pound baking powder cans full. Put covers on cans lightly so the dough can rise. Put cans in a pan with little water and bake one hour and fifteen minutes.—Kathryn H. Meeder.

Clam Chowder for Six.

One can genuine eastern Little-Neck clams. Take three medium sized onions sliced thin; put in stew kettle with piece of butter size of an egg; cook until brown, stirring once in a while to brown evenly and prevent burning. Peel and slice thin four good sized potatoes; when onions are brown put in the potatoes and cover with hot water (enough to cover to depth of two or three inches), adding the juice of the clams. Cook from 20 minutes to half an hour till potatoes are well done. Before serving salt and pepper to taste, add the clams and a couple of broken soda crackers.

KITCHEN ECONOMY.

Hang up the broom! It will last longer, and sweep better, if properly cared for; and if always in place, is easily found. When through using the scrub-brush, wash, rinse and put to dry bristles side down. Treated in this way it is always clean and is more durable.

The period of usefulness of the vegetable brush is lengthened by half if cared for in the same manner.

Mops and all cloths used in cleaning should be washed in clean water, and hung in such a manner that they will dry quickly. They will then be clean and sweet when again needed.

Wash the dish-cloth in clean soapy water, rinse, wring dry, and hang in such a manner that it will dry quickly. Hang out-of-doors if possible.

An oiled kitchen floor, whether of hard or soft wood, is much more easily cleaned than an unoiled floor. An oiled floor is more durable than an unoiled one. Use boiled oil; heat it and apply to the floor with an old woolen cloth. Rub the oil in well. Cover the floor with papers, to prevent the oil tracking if the room be used while the oil is still fresh. If the oiling is done late in the afternoon or at night, the papers may be removed in the morning and the floor washed with cool water. If no washing of the floor is done for several hours after oiling, more of the oil will soak into the floor, and it lasts longer. Floors are much more easily cared for, and lok better, if oiled once a month.—Mary L. Bull, Minnesota University Farm.

For the kitchen sink I cut out a round piece of flat rubber which serves as a stopper, thus making it easy to wash and rinse towels, flannels, etc., in a sink full of hot water. The suction of the water holds the rubber tightly in place.

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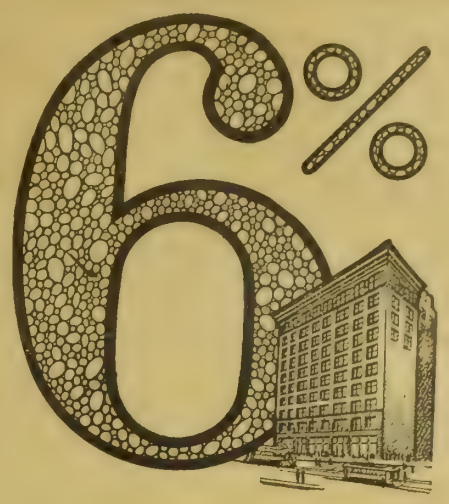

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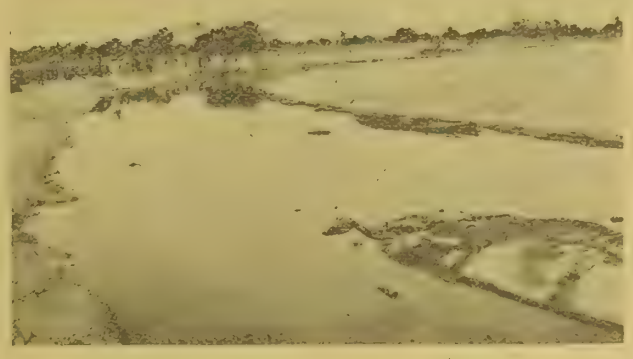

This cut shows depth of soil on our lands. Note the beautiful growth and the broad level valley.

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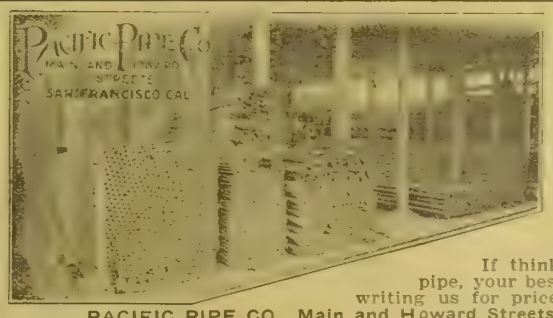

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San Francisco-Los Angeles Produce Markets

Los Angeles Market

LOS ANGELES, Sept 20, 1911.

Butter.

Butter is firm at former prices, receipts about 50,000 lbs. daily.

Prices to trade 2½c in advance of the following Produce Exchange quotations:

Extras	26½
Firsts	25
Ladles	23
Country	20

Cheese.

Local Anchor	16
Oregon Daisy	16½
Northern Fresh	16
Domestic Swiss	18
Imported Swiss	32

Eggs and Poultry.

Eggs have taken a great advance. In fact, the advance was so strong that Tuesday saw a drop of two cents, which, it is predicted, will soon be recovered. Receipts are much lighter than the demand.

Paying prices f. o. b. Los Angeles are:

Local ranch, candled	40
Case count buying price	36
Eastern	28@30
Eastern storage	25@26
Pullets	20

Dealers pay for live poultry f. o. b.:

Hens, per lb	15
Roosters	6
Broilers	14
Fryers	12
Roasters	14
Turkeys	23@27
Ducks	12
Geese	10
Guinea hens, doz	4.00
Squabs, doz	1.75

Live Stock.

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs	7¾
Prime steers	6
Heifers	6
Calves, per lb	6½
Sheep, ewes, per head	4.75
Lambs, per head	3.75@4.25
Wethers	5.00@5.50

Potatoes.

Wholesale prices are:

Sweet potatoes have taken a serious decline and are now at lowest for the season. Stock in the market is mostly northern.

Sweets, yellow, ctl	1.75@2.25
Highlands, clt	1.75@1.85

Onions.

Wholesale quotations:

Australian Red, ctl	1.75
Silverskins, sk	1.50
Yellow Danvers, clt	1.25
Garlic	5@6

Vegetables.

Wholesale quotations:

Artichokes, northern, doz	90
Beets, doz bunches	25@30
Bell peppers, lb	4@5
Beans, wax	6@8
Beans, Limas	5@6
Green chilis	3@5
Chilis, dried	15@20
Cucumbers, lugs	30@40
Cabbage, sack	75@1.00
Cabbage, red, lb	3
Cauliflower, doz	1.50
Celery, new, crate	1.50@1.75
Carrots, doz bunches	25@30
Corn, lug	45@60
Egg plant	3@5
Horseradish, lb	13½
Onions, green, doz bunches	20@25
Kohl-rabi, doz bunches	40
Leeks, doz	45@50
Lettuce, crate	1.00@1.25
Mushrooms, lb	50@1.00
Oyster plant, lb	15@20
Okra	6@8
Peas, lb	6@8
Parsley, doz bunches	25@30
Parsnips, doz bunches	45
Radishes, doz bunches	15@20
Rhubarb, Strawberry	1.00@1.25
Spinach, doz	15@20
Squash, summer	30@40
Spearmint, doz	25@30
Tomatoes, lug	25@35
Turnips, sack	1.00@1.25
Watercress, doz	25@40

Citrus Fruits.

Valencias	3.50@4.00
Grapefruit	2.00@4.00
Lemons	2.00@3.75
Limes, hundred	1.25

Fresh Fruits.

Bellflowers are arriving freely, most of them being 4½ tiers. The demand has been keen and stock is kept well cleaned up.

Wholesale prices on the market are:

Alligator Pears	1.50@2.50
Apples, Alexanders	1.00
Apples, Bellflowers	1.15@1.25
Apples, Gravensteins	1.00
Apples, Skinners	1.00
Apples, Crab, lug	1.50
Bananas	4@4½
Casabas, crate	1.50
Cantaloupes, small	70@75
Cantaloupes, large	1.15@1.25
Figs, box	75@1.25
Grapes, Thompson Seedless, lb	3
Grapes, Black Hamburg, lug	65
Grapes, Muscats	65
Grapes, Malagas, lug	90@1.00
Grapes, Tokays	1.00@1.25
Loganberries	6@7
Nectarines, lug	1.00@1.25
Peaches, lug	50@75
Pineapples	7@8
Plums, Clymans, lug	1.50
Plums, Burbanks	75@85
Plums, Tragedy	1.50
Prunes, Simoni	1.25@1.50
Pears, Bartlett, lb	5
Quinces, lug	1.00@1.25
Blackberries	6@7
Raspberries	10@11
Strawberries	4@6
Watermelons, lb	½@1

Dried Fruits.

Wholesale prices to retailers are:

Evaporated Apples, fancy, lb	15
Apricots	16@17
Figs, box	1.65@2.00
Peaches	12½@13
Nectarines	12
Pears	12@13
Prunes	10@16
Plums	10

Beans Dried.

Wholesale quotations:

Limas	6.75
Black eyes	4.55
Pinks	5.00
Lady Washington	4.25
Small white	4.10@4.25
Garvanzas	4.50
Bayous	4.50@5.00
Lentils	6.00@7.00
Mexican Reds	4.75@5.00

Nuts.

Wholesale quotations:

No. 1 soft shell walnuts	18
Almonds, IXL, lb	19@20
Pecans, polished	15@17
Peanuts, Eastern	8
Peanuts, California	6
Pine Nuts	18

Honey.

Wholesale quotations:

Extracted water white	8½
Extracted light amber	7½
Comb water white	16@17
Light amber	13@14
Beeswax	30

Hay.

Buying prices f. o. b. cars Los Angeles are:

Barley hay	12.00@13.00
Wheat hay	11.50@12.50
Tame oats	15.00@16.00
Alfalfa	12.50@13.50

Grain.

Wholesale selling price f. o. b. Los Angeles:

Wheat, new, cental	1.70@1.85
Corn	1.70@1.95
Kaffir	2.10
Millet	3.75
Popcorn	4.75@5.00
Egyptian corn	1.65
Red oats	1.80
Seed barley	1.50
Milo	1.95

Feed Stuff

Wholesale selling price f. o. b. Los Angeles:

Alfalfa meal	1.15
Beef scrap	3.10
Cracked corn	1.90
Cracked wheat	1.85
Shorts	1.95
Bran	1.70
Oil cake meal	2.50
Feed meal	1.95
Rolled Barley	1.75
Middlings	1.85

San Francisco Market

SAN FRANCISCO, Sept. 19, 1911.

Butter.

Butter is very firm at a half point advance on firsts. Extras advanced on Saturday, but lost it on Monday; so it stands exactly as last week.

Prices to trade 2½c in advance of the following Produce Exchange quotations:

California extras, lb	27
Prime firsts	25
Firsts	23½
Seconds	22

Cheese.

Cal. flats	11@14
Cal. Y. America, fy, new	15@16½
Oregon, fancy	13½

Eggs and Poultry.

Eggs exceptionally firm with strong advance during the week on extras and slight advance on other grades.

Official quotations of the San Francisco Wholesale Dairy and Produce Exchange are:

Fresh ranch extras	37½
Prime firsts	30
Firsts	27
Seconds	19½
Eastern seconds	16
Select pullets	27½
Hens, doz	4.00@9.00
Fryers, doz	4.50@5.50
Ducks	4.00@7.00
Broilers	2.50@4.00
Roosters, doz	4.00@9.00
Geese	2.00@3.00
Goslings, pr	2.00@2.25
Pigeons	1.50@2.00
Turkeys	24@27
Squabs	2.00@2.50

Live Stock.

San Francisco prices, gross weight:

Steers	4@5½
Cows and heifers	3@4½
Calves, lb.	5@6¾
Hogs	5@7½
Wethers, No. 1	3¼@4
Milk lambs	5@5¼
Ewes, No. 1	3¼@3½

Potatoes.

Wholesale market quotations:

River, whites, ctl	1.00@1.25
Alamedas	1.50@1.75
Sweets, ctl	1.75@2.00

Onions.

Yellow, new	75@85
Garlic, new, lb	3@4

Vegetables.

Wholesale quotations:

Asparagus, box	1.00@1.75
Beans, string	2@3
Beans, wax	1½@2½
Limas	2½@3
Bell peppers, box	75@1.00
Cabbage, ctl	75@85
Carrots	70@75
Cucumbers, box	40@60
Corn, sack	50@1.00
Chili peppers, box	25@40
Celery, crate	1.50@2.50
Egg plant, box	35@50
Cauliflower, doz	50@60
Lettuce, crate	75@2.00
Okra, box	50@75
Peas, sack	1.75@2.00
Hubbard squash, sack	1.00
Summer squash, lug	35@50
Squash, Marrowfat	60@75
Tomatoes, box	25@40
Turnips	60@75

Citrus Fruits.

Valencias	3.25@4.50
Grapefruit	1.50@3.50
Lemons	1.50@5.50
Limes, Mexican	5.50@6.00

Fresh Fruits.

Apples, Gravensteins	75@1.60
Cantaloupes, standard	30@50
Cantaloupes, Rivers	80@1.00
Nutmegs, large, crate	30@50
Figs, layer, single	30@80
Grapes, Thompson Seed., crate	40@50
Grapes, blk	40@50
Grapes, Muscat, box	50@65
Pears, box	75@1.40
Peaches, box	40@1.00
Plums, box	40@60
Prunes, German, box	50@65
Quinces, box	75@1.00
Loganberries, chest	4.00@6.00
Blackberries, chest	4.00@5.00
Raspberries, chest	5.00@8.00
Strawberries	3.50@5.00
Pineapples, Hawaiian	2.00@3.50
Bananas	1.00@1.50
Watermelons, doz	1.25@2.00

Dried Fruits

FRUITS—1911 crop, f. o.b., carload lots, per lb.—Apples, 10@11½c; Apricots, 14½@17½c; Peaches, 9½@11½c; Prunes, bulk basis, 5½@6⅝c; per lb., 4¾@9c, with a premium of ½@1c on large sizes; Figs, 5@6c for White; Pears, 10@13c.

RAISINS—1911 crop: Seeded, per pkg.—Fancy, No. 16, 7½@7¾c; Choice, No. 16, 7@7⅛c; Loose Muscatels, in 50-lb. boxes—Standard, 4-crown, 6⅛c; do, 3-crown, 5½c; do, 2-crown, 5¼c. Seedless—Muscatel, 5¼@5½c; Sultanas, 6@6¼c; Thompson's, 7@7½c.

Nuts.

Walnuts, No. 1 soft shell	16@16½
Walnuts, No. 1 hard shell	14½
Almonds, '10, N P U	16@16½
Almonds, '10, Nonp	18@18¾
Almonds, '10, I X L	16½@17¼
Pecans	14@17
Chestnuts, California	6@8
Peanuts	5@5½

Beans Dried.

Limas	5.40@5.50
Pink	4.35@4.65
Black eyes	4.50@5.75
Small white	3.65@3.80
Large white	3.60@3.70
Kidneys	5.50@5.60
Garbanzos	3.00@3.25
Bayou	3.75@4.00
Horse beans	2.60@2.75
Red Mexicans	5.25@5.40
Cranberry	3.30@3.75

Hops

Hops, coast, 1910	28@32
Hops, 1911 contracts	30@35
Hops, Oregon, 1911	30@35

Honey.

Water white, comb, '11	15@16
Dark comb	12½
Extracted white, '11	9@10
Extracted dark	6½
Beeswax, lb	24@30

Hay.

Scott, Magner & Miller say:

Receipts of hay during the week have amounted to 5000 tons. Quite a proportion of this amount consisted of alfalfa, and of poorer varieties of hay that have been shipped in from the lowlands along the rivers. With the exception of Monday the arrivals by car of the better grades have not been large. It is plainly evident that in our better hay districts the fields have been cleared to such an extent that comparatively there will not be much more to come into our markets by rail until we begin to break into the warehouses.

The market has been well sustained for the best grades and has advanced 50c per ton on fancy lots. Strictly "gilt-edged" wheat hay, baled in lightweight bales, from the Livermore district is readily placed for retailing purposes at $18.50 here, and fancy red oat hay at $15.50. The poorer grades have not responded as yet to the advance in the choicer varieties.

There is a decided firmness to the entire situation and a feeling that the entire line must necessarily advance to a somewhat higher basis as quickly as hay begins to be drawn from the warehouses, which will soon be necessary to obtain choice lots to supply the current trade demand.

The situation on alfalfa remains just about as heretofore. Large lots are moving into market and being placed rapidly on orders previously taken.

We quote the wholesale prices in round lots on today's market as follows, viz:

Fancy wheat hay	18.00@18.50
No. 1 wheat or wheat & oats	16.00@17.00
No. 2 wheat or wheat & Oat	13.00@14.00
Choice tame	14.50@15.50
Other tame oat	10.00@13.00
Wild oats	10.00@12.50
Stock hay	5.50@6.00
Alfalfa	9.00@11.00
Straw, bale	55@65

Grain.

Wheat	1.42½@1.45
Barley, fancy	1.58¾@1.60
Barley, good to choice	1.55@1.57½
Barley, poor to fair	1.50@1.53¾
Corn	1.60@1.62
Oats, red	1.65@1.70
Rye	1.47½@1.52½
Mustard, brown	5½
Alfalfa seed	18
Millet	3@3¼
Flaxseed	5@5½
Broom corn seed, ton	30.00

Feed Stuff

Alfalfa meal	15.00
Bran, ton	28.00@29.00
Feed cornmeal, ton	38.00@39.00
Cracked corn	38.00@39.00
Rolled barley, ton	33.00@34.50
Rolled oats, ton	31.00@32.00
Middlings	32.00@34.00
Oil cake meal	42.50@43.50
Cocoanut cake, ton	24.00@25.00
Mixed feed, ton	25.00@27.00
Shorts	29.00@30.00

Deciduous Fruit Market

F. B. McKevitt, general manager of the California Fruit Distributors, reports:

Sacramento, Cal., Sept. 16, 1911.

The following gives the number of cars of deciduous fruit shipped from all points in California for the week(seven days) ending Friday morning, September 15, 1911:

Peaches—38½ cars. This shipment was made up principally of Salways, with a few Clings. Pracer County is now practically done with both varieties. There are still a few Salways left in one or two sections, but probably there will not be more than 25 carloads of them altogether. The movement, therefore, is practically concluded for the season.

Plums—11¾ cars. This shipment is just about one-half of that of the previous week. There are very few plums left, and it is likely that the coming week will see their finish.

Pears—65½ cars. Bartletts are now nearly gone. Fall and Winter pears are coming forward slowly, but will be in greater evidence the next two weeks. Fall pears are of unusually good quality.

Grapes—508½ cars. It is probable that shipment of this variety is now as great as it will be at any time during the season. Tokays continue to be the principal variety offered, although there are still a few Cornichons and Malagas. More of both varieties would be available if the demand justified. Owing to the very low prices prevailing for grapes in all Eastern markets, growers are generally restricting their shipments, and it is expected that there will be considerably less fruit of this variety forwarded during the coming week than in the one just passed. Grapes are now just approaching their full maturity and will be of far better quality from this on than at any previous time in the season.

Weather conditions are everything that could be desired.

Comparative statement of shipments up to September 9, 1911:

	1910	1911
Cherries	250	215¼
Apricots	289¼	214½
Peaches	2386¾	1895
Plums	1552½	1342
Pears	2214	1966¾
Grapes	1846½	1629¼
Apples	428	12
Sundry	2	....
Total	8970	7275¾

Citrus Fruit Market

LOS ANGELES, Sept. 20, 1911.

There is no material change in the Valencia situation. If anything, the demand is slightly stronger and desirable sizes are picked up in every market at good prices. The large number of small sizes forces some stock off at reduced prices. The quality is of the very best and promises to continue to the end of the season.

The lemon market is strengthening, a few foreigns are coming and the high quality of all Californias offered moves them quickly.

Shipments.

Shipments of oranges to date since November 1st, 1910, 35,943 cars, lemons 6,335, total 42,278. To same date last season: Oranges 24,738 cars, lemons 4,538, total 29,276.

NEW YORK, Sept. 19.—Six cars Valencias and one car lemons sold. Market steady on Valencias, strong on lemons. Weather fair.

Cream Separators, all sizes and prices. Guy F. Kelsey & Co., 106 East Eighth St., Los Angeles, Cal.

VALENCIAS— Avge.
Old Mission, fy, Chapman.....$5.75
Old Mission, ch, Chapman 4.80
Golden Eagle, sd, Chapman 4.10
Lady Rowena, Chapman 3.30
Stag, A C G Ex 4.55
Pointer, A C G Ex 2.80
Red C, Covina Ex 3.65
Cougar, Covina Ex 2.90
Pointer, A C G Ex 2.50
Hunter, A C G Ex 1.65
Red C, Covina Ex 3.60
Cougar, Covina Ex 2.80
Pointer, A C G Ex 2.50
Hunter, A C G Ex 1.65
LEMONS—
Club $4.60

BOSTON, Sept. 19.—Four cars sold. Weather cloudy. Market unchanged on oranges, high on lemons.
VALENCIAS— Avge.
Red Shield, A C G, Azusa $3.45
Stag, A C G, Charter Oak..... 4.60
Hunter, A C G, Charter Oak..... 2.85
Standard, sd, National O Co..... 3.65
El Azar, A C G Ex..... 3.00
Pointer, A C G, Charter Oak..... 3.05
Orchard, or, National O Co..... 4.50
LEMONS—
Laurel, G C, Corona $4.85
Pennant, Q C, Corona 4.85
Princess, Q C, Corona..... 4.75

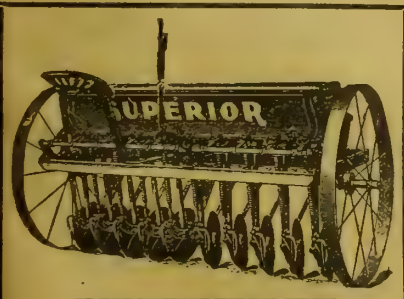
NEW YORK, Sept. 18.—Nine cars Valencias, one lemons sold. Market steady on both oranges and lemons. Fair.
VALENCIAS— Avge.
Pinnacle, O. K. Ex.....$4.70
Bear, O. K. Ex..... 2.60
Majesty, O. K. Ex..... 2.80
Coyote, O. K. Ex..... 2.05
Pointer, A. C. G. Ex..... 2.75
Hunter, A. C. G. Ex..... 1.85
Glendora Hgts., fy, A. C. G. Ex..... 4.40
Glendora Hgts, ch, A. C. G. Ex..... 3.25
Evolution, A. C. G. Ex..... 2.60
Red C, Covina Ex..... 3.30
Cougar, Covina Ex..... 2.70
Pointer, A. C. G. Ex..... 2.40
Stag, A. C. G. Ex..... 1.85
Titus Ranch, fy, San Marino G. P. A. 4.20
El Toreador, sd, San Marino G. P. A. 3.65
Old Mission, fy, Chapman..... 5.90
Old Mission, ch, Chapman..... 4.65
Golden Eagle, sd, Chapman..... 3.80
Lady Rowena, Chapman..... 3.35
Old Mission, fy, Chapman..... 6.15
Old Mission, ch, Chapman..... 4.80
Golden Eagle, sd, Chapman..... 4.00
Corona, National O. Co..... 3.90
Corona, stds, National O. Co..... 2.85
LEMONS—
Selected $5.20
Loma 4.55

CLEVELAND, Sept. 18.—One car Valencias, one car lemons sold. Market higher. Warm, cloudy.
VALENCIAS— Avge.
Searchlight, S. S. Orange.....$3.95
Sunset, S. S. Orange..... 2.80
LEMONS—
Red Hill, S. S. Tustin.....$4.50
Evergreen, S. S. Tustin..... 2.70
Purity, S. S. Tustin..... 4.00

BOSTON, Sept. 18.—Five cars sold. Cold, cloudy. Market unchanged.
VALENCIAS— Avge.
Las Fuentes, Crocker-Sperry $4.35
Boston, A. C. G., San Fernando.... 3.85
Pointer, A. C. G., Glendora..... 2.70
Rooster, S. S. Orange..... 4.15
El Toreador, sd, San Marino G. P. A. 4.15
Montecito, Crocker-Sperry 3.45
Plymouth, A. C. G., San Fernando.. 3.05
Hunter, A. C. G., Glendora..... 2.30
Titus Ranch, fy, San Marino..... 4.75

CINCINNATI, Sept. 18.—Warm, raining. Market steady.
VALENCIAS— Avge.
Rooster, S. S. Orange.....$2.80
S. S. Brand, S. S. Orange..... 2.85
Searchlight, S. S. Orange..... 2.50
Plain Ends, S. S. Orange..... 2.20
LEMONS—
Pet, S. A. Ex.....$4.15
Greyhound, S. A. Ex..... 3.80

PHILADELPHIA, Sept. 18.—Four cars oranges, one mixed car and one car lemons sold.
VALENCIAS— Avge.
Squirrel, A. H. Prenda.....$2.10
Spanish Girl, A. H. Prenda..... 1.75
Pointer, A. C. G., Glendora..... 2.70
Liberty Girl 4.45
White Cross, Growers Ft. Co..... 3.15
Palm Tree, A. H. Prenda..... 2.00
Stag, A. C. G., Glendora..... 4.65
Hunter, A. C. G., Glendora..... 1.95
Beach, sd, G. & Willard..... 4.00
Busch Garden 2.70
LEMONS—
Bridal Veil, V. C. Limoneira.....$3.95
Euclid, or, Growers Ft. Co..... 4.85
Plain 2.60
White Cross, V. C. Limoneira..... 3.35
Flower, Growers Ft. Co..... 3.80



SUPERIOR GRAIN DRILLS

If your dealer does not handle them, write for information to

The H. C. Shaw Co.
Stockton, Cal.

PITTSBURGH, Sept. 18.—One car sold. Light arrivals. Weather cool, pleasant.
VALENCIAS— Avge.
Pointer, A. C. G., Glendora.....$2.85
Hunter, A. C. G., Glendora..... 2.00

ST. LOUIS, Sept. 18.—Favorable. Two cars sold. Market stronger.
VALENCIAS— Avge.
Searchlight, S. S., Orange.....$3.25
S. S. Brand, S. S., Orange..... 2.85
LEMONS—
Red Hill, S. S., Tustin.....$4.05
Evergreen, S. E., Tustin..... 2.65
Purity, S. S., Tustin..... 3.45

MARKETING CALIFORNIA HONEY CROP.

(Continued from Page 269.)

ern buckwheat honey, white clover honey and particularly the southern honeys from Florida and other portions of the South, that they contain a higher percentage of water than do California honeys; and so California honeys low in water content are in demand.

The baker uses honey for sweetening power, and to him the sugar content of the honey is an important factor. The total sugar content of the average alfalfa honey is 81.51 per cent, or about 5 per cent in excess of the total sugar content of the average honey, which average, of course, includes not only the high sugar containing alfalfa honey, but similar western honeys, such as the mesquite, blue gum and the catclaw of Texas, all ranging in the neighborhood of 81 per cent sugar content. What is of particular interest to the producer is that alfalfa honey averages 3 per cent higher in sugar content than orange honey, 4 per cent higher than sage honey, and nearly 5 per cent higher than wild buckwheat honey. It may be asked of what significance these figures are. They simply mean that the purchaser of honey for baking and other sweetening purposes can afford to pay not only as much for alfalfa honey as he does for sage honey for the same purpose, but could even pay up to 5 per cent more than he does for sage honey for the same purpose. And when this is realized and honey for baking purposes is graded as it should be according to sugar content, it will mean thousands of dollars in the pockets of the alfalfa, eucalyptus, mesquite and other high sugar content honey producers of California.

Why Sage Honey is in Demand in the Eastern Market.

Sage honey is low in water content, of a high purity type, light in color and mild in flavor. In chemical composition it approaches, with one exception, the two finest and rarest eastern table honeys—pure apple honey and raspberry honey. What would the eastern honey producer think if he could produce raspberry honey by the carload and the hundred tons? He would think he had a veritable bonanza, and he would be right—he would have what the California mountain honey producer enjoys, with the added superiority of a mild, sweet-scented flavor of the wild raspberry openings of Northern Michigan instead of the somewhat less aromatic, slightly pungent tang of the California black and white sage. But to offset this slight disadvantage, if indeed it may be called a disadvantage at all, the California producer has something that far outweighs and enhances his product with the commercial handler of honey beyond any mere shade of flavor—for he has a product of such a sugar make-up as to retard and, in many instances, prevent the granulation of the honey. This is a tremendous advantage to the buyer, dealer, bottler and shipper of honey, for to have a honey to handle that is always liquid saves hundreds of dollars in getting it in small packages to the consumer. The secret of this characteristic of sage honey is the fact that in the invert sugar content the levulose, which probably never does become crystalized, is far in excess of the dextrose, the percentages ranging for the sage honey 42.75 per cent levulose to 31.22 per cent dextrose as compared to 40.24 per cent levulose and 36.85 per cent dextrose in the average alfalfa honey—a type that granulates readily. The actual difference in levulose, 2½ per cent, is not so marked, but the decrease in the amount of dextrose in the sage honey of over 4½ per cent as compared with alfalfa honey makes a total difference of over 7 per cent in the granulating factor in the two honeys—sufficient to account for the marked non-crystaline tendency of the sage honey—the feature which, together with its other uniformly high characteristics, makes California sage honey in demand in the markets of the world.

Do your cows milk hard? Send 50 cents for teat expander. O. J. Weber Co., 225-227-229-231 East Sixth St., Los Angeles, Cal.

Veterinary

Answers in this column by Fred G. Matthews, M. S., D. V. M., 1232 Central Ave., Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Lump Jaw?

A cow purchased last June has a lump on her jaw. The bone is enlarged and the skin seems grown to the bone around an old scar. The condition has existed in its present state for two years. Is the disease likely to return?—Subscriber, Buena Park.

The dormant state of the injured part for two years practically assures the disappearance of the original active cause, whatever that may have been—an accident, an abscess, or the germs of lump jaw, and for that reason I would not anticipate further trouble.—F. G. M.

Warts.

A cow, five years old, has warts on her teats. Kindly prescribe a remedy. —Subscriber, Tulare.

Mix sulphur and castor oil to make a thin paste and rub a little of this on the warts once every two days.—F. G. M.

Teeth Falling Out.

Some of my hogs are losing their teeth. The teeth are aparently sound but after becoming loose fall out. I am told this is caused by a "screw worm." Is this correct?—Subscriber, Covina.

The pig between the ages of two and three years sheds a number of its milk-teeth and permanent teeth grow in their places. Some front teeth and some back teeth are shed and replaced during this period of life. I have no knowledge of any worm or any other animal parasite which infests the mouth and dislodges the teeth. However, this may occur in a systemic disease with malnutrition of the bones. Also some germs or mold grow in the mouth resulting in ulceration of the gums and loss of teeth. In this instance ulcers are not reported and the pigs are not otherwise ailing, hence the opinion that teeth are being shed.—F. G. M.

Exuberant Granulations.

A bad cut on the forequarters of a mare has refused to heal and now a portion of flesh as large as an egg protrudes. Burnt alum has been used but with little success. The horse seems to be in pain raising the foot continually. Is this protruding flesh painful? Would the use of bandages tend to promote such growth of flesh? Are there any healing qualities in dry sulphur?—Subscriber, Modesto.

Granulations protruding from the surface are rarely sensitive, therefore a good remedy is to apply a hot iron to the part and burn away diseased tissue till the animal begins to manifest pain. Bandaging would hinder rather than promote excessive granulations. The animal's action in raising the foot continually does indicate pain, but due undoubtedly to an injury to deeper structures—ligaments, tendons or bone. Dry sulphur is used with good results on open wounds.—F. G. M.

Lameness.

I have a horse which has been a little lame about one year. A veterinarian prescribed a blister for a "cup bone," but the use of the remedy did not relieve the lameness and I have since used other blisters with as little results, as the lameness still remains. —Subscriber, Oceanside.

Please observe that your description is incomplete, as you do not state whether the lameness is in a front or hind limb, and the location of the bone or part supposed to be affected is also omitted. Kindly rewrite your query describing alterations if any and give the symptoms in detail.—F. G. M.

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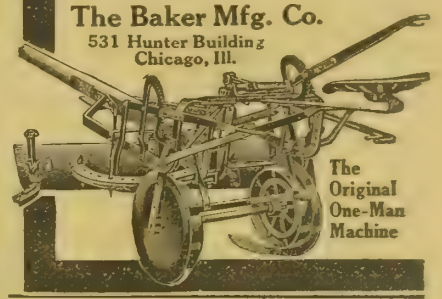

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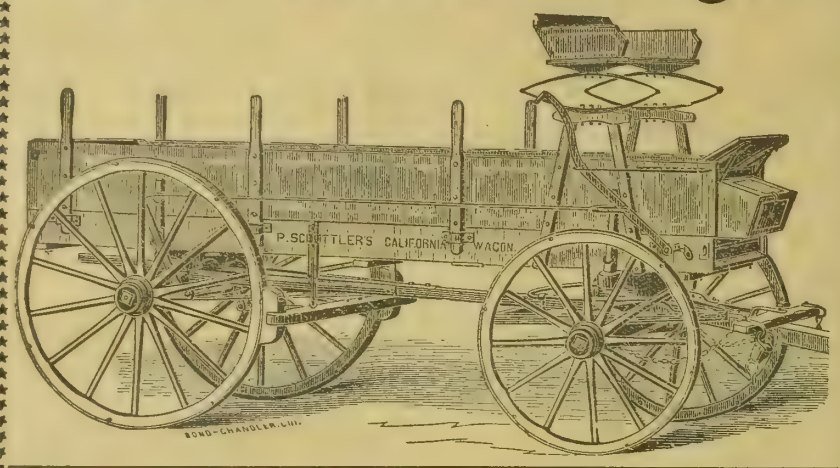

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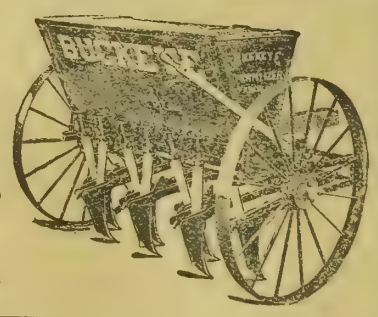

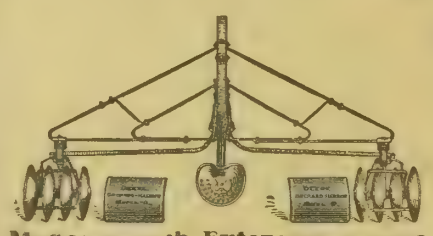

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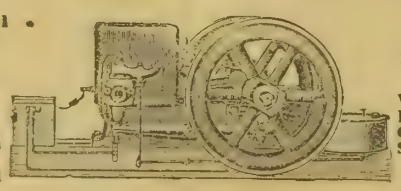

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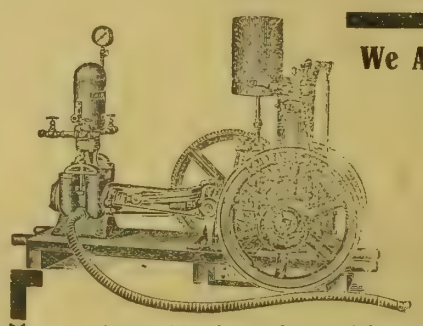

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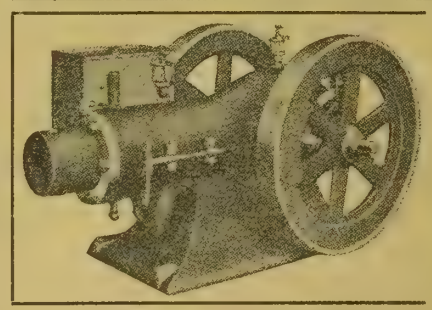

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Thy sunlight everywhere
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—Henry Van Dyke

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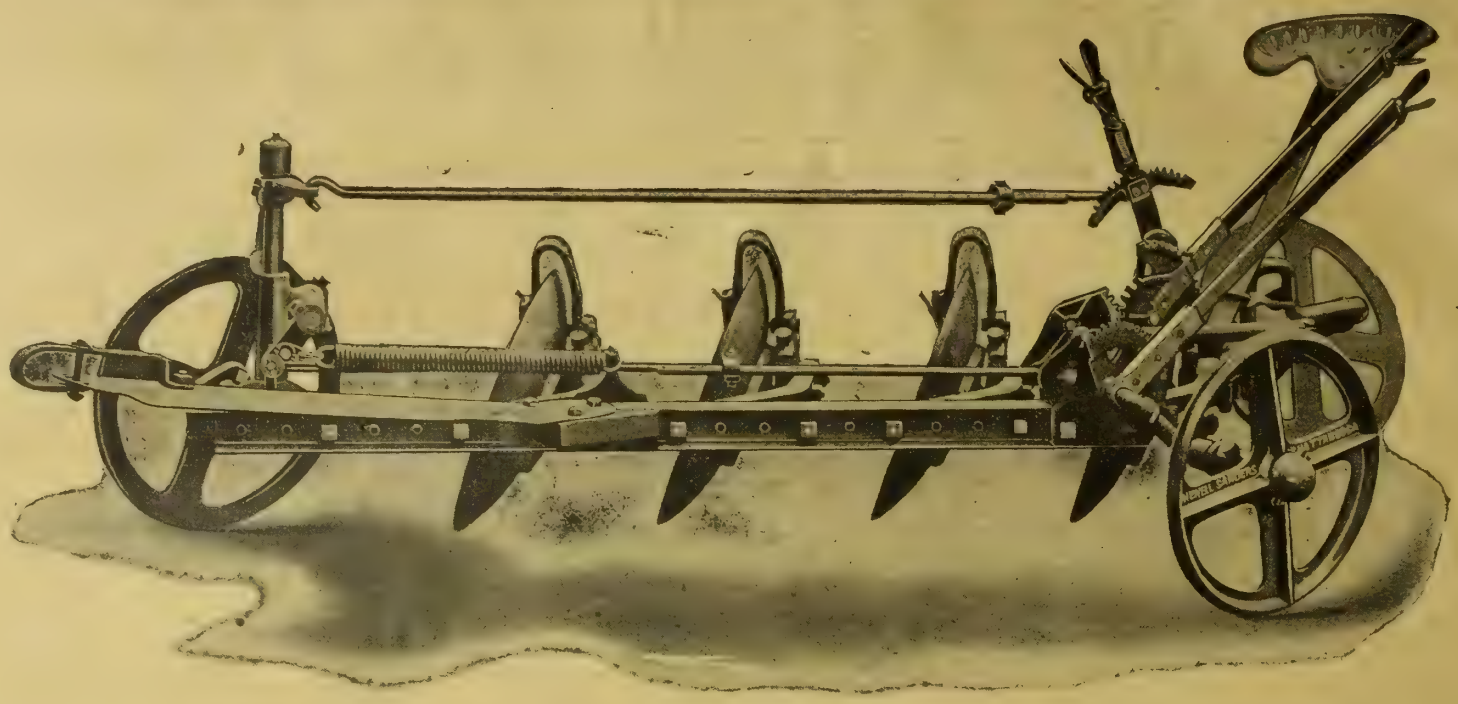

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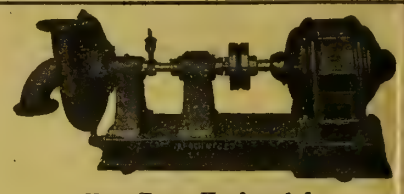

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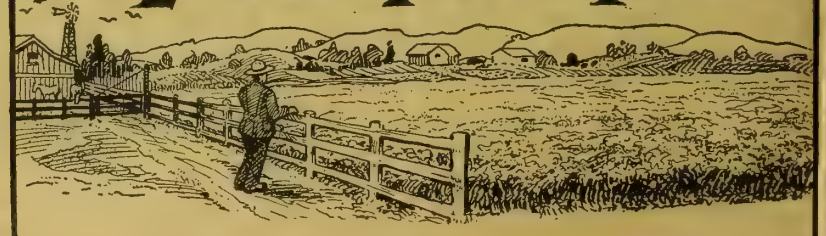

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California Cultivator

Vol. XXXVII. No. 13. LOS ANGELES: THURSDAY, SEPTEMBER 28, 1911 One Dollar the Year

Sub-Irrigation in Underground Ditches

Milo B. Williams, Irrigation Engineer Connected with the Office of Experiment Stations of U. S. Department of Agriculture, Writes of Systems in Other Sections of the Country

Investigations tend to show that where subirrigation has proven both economical and successful the soil, subsoil and underground conditions are different from those found on the average farm. The ideal situation for subirrigation is where water will spread laterally through the soil and subsoil to great distances before sinking below the reach of plant roots. It is probable that all agricultural lands could be thoroughly subirrigated if it were possible to apply the water to a great enough number of points a few inches beneath the surface. But as the cost of a subirrigation system increases very rapidly with the increase in the number of points at which it is necessary to inject the water into the soil, the economical limit is soon reached, and the farmer cannot afford to install the system for the benefits he would gain.

Each set of underground conditions may demand a different number of injection points, which means a different spacing of pipe lines, to give an even distribution of moisture within the root zone. Subirrigation in a loose sandy soil or a porous peat soil, either of which overlays an impervious hardpan or clay, presents conditions extremely favorable for success. Pipe lines can be spaced from eighteen to thirty feet apart, which makes the cost remain moderate. Such soils permit the water to travel through them easily, and the impervious stratum prevents the water from sinking while spreading laterally and being drawn up to the plant roots. To give the same results in a heavier and closer soil, the distance between tile lines must be less. The tendency in this case is to waterlog the soil directly over the pipe lines and leave dry spaces between, unless close spacing is used. A closer spacing of laterals is also necessary where there is no hardpan or other impervious substratum to prevent the water wasting downward. The lateral spread in this case must be done by the capillary power of the soil particles, which is extremely slow in action and will not carry the water a great distance.

Study Your Conditions.

The writer wishes to urge irrigators to study their field conditions carefully before installing a system of subirrigation on a large area. A few inexpensive experiments in the land proposed to be sub-irrigated, may be the saving of much money and result in success rather than failure.

A simple test can be made by constructing a short sub-irrigation pipe and raising a crop of field peas, beans, or some other rapid growing broadcast crop on the ground. The crop should be sown 20 to 30 feet either side of the pipe line, making a strip 40 to 60 feet for the test. The thrift of the plants will mark the distribution of the water either side of the pipe line.

It is suggested that the test line be made of common clay drain tile having an internal diameter of three inches and laid in a level trench from 50 to 100 feet in length and 20 inches deep. The tile should be laid closely and to end and the joints left uncemented. One end of the tile line should be closed and the opposite enter a small bulkhead for admitting the irrigation water. This bulkhead can be made by setting a 2½ foot section of 12-inch sewer pipe vertically in the ground with the bell end up. The lower end should set six inches lower than the bottom of the tile trench, and contain three inches of concrete to form a bottom to the bulkhead. The tile line can enter the bulkhead through a hole in the side near the bottom and be cemented in place. A water tank placed so that a faucet will stand over the bulkhead forms a convenient arrangement of measuring the water used and controlling the flow into the test line.

Test System.

It is best to construct the test system in the fall of the year and permit the refilled earth to settle over the tile during the winter season.

During irrigation, water should be maintained in the bulkhead at a level sufficiently high to cause some pressure within the tile, but not high enough to cause water to flood the surface directly over the tile.

The two important factors to be determined in a test of this nature are the amount of water consumed by the soil during the growth of a crop, and the area irrigated by one tile line. The amount of water used can be measured in the water tank and the area irrigated by the boundaries of a good crop. Knowing these factors gives the irrigator substantial data for use in the designing and estimating of the cost of a system of sub-irrigation adaptable to his individual conditions.

Several other factors may be brought out in the course of the experiment. The quantity of water absorbed by the ground beneath the root zone may be excessive and indicate sub-irrigation impractical. A large amount of water may be absorbed in the beginning of the season, but gradually after the substrata becomes saturated, less and less will be required to supply the crop. Under some soil conditions the water may be taken extremely slow, and several days or even weeks be necessary to reach the maximum spread from the tile. The ground directly about the tile may become oversaturated and destroy the crop at that point without irrigating a desirable distance away. Many of these factors could be determined in less time if the irrigator is prepared to make soil moisture measurements during the operation of a test system.

The type of construction used in the above test should not be taken as a desirable design to use in a permanent system. A permanent system should be designed to meet the individual's land and crop conditions.

Sub-Irrigation at Sanford, Florida.

The conditions in which sub-irrigation is being practiced about Sanford, Florida, are peculiar to farming and farm lands and should be noted carefully by the prospective sub-irrigationist. This section has the largest tile-sub-irrigated area in the United States and follows a simple line of construction.

In the beginning, the land must be drained before it can be farmed, the system of sub-irrigation used gives an ideal system of drainage for the crops grown. The crops cultivated are all shallow rooting, consisting principally of celery, lettuce, egg-plant and other valuable vegetables. The fact that only shallow rooting crops are grown, eliminates the danger of the system of tile being stopped with roots, a factor which has caused the failure of many sub-irrigation experiments with deep rooting crops.

The soil is extremely open, sterile sand, increasing in coarseness and porosity as the sub-soil is entered. Below the subsoil is generally found an impervious stratum of marl, clay or stone. These conditions of ground form a soil reservoir in which water permeates freely and is prevented from escaping below the reach of plant roots.

The topography of the ground is extremely even, having slight grades which permit the tile lines being laid on flat continuous grades and remain the same depth in the ground at all points.

System.

The Florida sub-irrigation system consists of a series of parallel lateral pipe lines, fed by a main supply pipe or header and emptying into a drainage ditch or tile line, with the necessary controlling structures for injecting water into the soil by gravity flow.

The laterals are spread from 18 to 20 feet apart and placed in trenches 18 to 20 inches deep. Little fall is given to the tile, generally about two inches to the 100 feet or less. Common clay drain tile, 12 inches in length and three inches in internal diameter are standardly used. The tiles are laid closely end to end and a shovel full of sawdust, cinders or waste placed over each joint to prevent the sand entering the tile. Controlling boxes or "stop pockets" are placed in the laterals at their inlet and outlet and intermediately spaced from 200 to 400 feet, to give entrance to the line for checking, releasing and controlling the flow of water. The stop-pockets consist of vertical sections of 12-inch tile set in the ground intersecting the laterals. They enter and leave the stop-pocket through holes cut in opposite sides near the bottom. The bottom and connections are made water tight with cement. To form a weir within the stop-pocket for use in checking the flow of water in the lateral, a concrete wall one inch in thickness is cemented into the pocket. The wall is set vertically and perpendicular to the lateral and in such a way as to divide the pocket into an inlet chamber controlling one-third the space and an outlet chamber twice as large. The wall contains two metal lined holes on its center line, one is three inches in diameter and directly in line with the bore of the lateral. The other is two inches in diameter and placed six inches above the larger. The top of the weir wall comes within about two inches of the top of the pocket, so that when all the holes are closed the water will pour over from one chamber into the other. When the system is being used for drainage the holes in the stop-pockets are left open so that the water can pass through freely. When the system is being used for irrigation the bottom hole is closed with a wooden plug and the water is checked until it backs up in the tile line under a pressure head of six inches. If this pressure is not sufficient a second plug is placed in the upper hole and the water forced to go over the top of the weir wall, which places a pressure head of about 12 inches on the tile line.

The pockets used at the inlet of the laterals do not contain the weir wall as their office is only to control the amount of water entering the laterals. The connection between the inlet pocket and the supply main contains a short length of two-inch iron pipe cemented into the connecting tile, thus forming a plug hole. A system of plugs are used in the inlet pocket to assist in letting in different quantities of water. This consists of two-inch plugs having different size holes through their centers into which a second set of hollow plugs fit.

The main supply pipe in the Florida system follows the high ground or the high side of the field, intersecting the heads of the laterals. The main is built of four or five-inch bell-joint, vitrified clay pipe with the joints cemented water tight. At the intersection of each lateral head a hole is cut into the side of the main and the connecting tile and iron pipe cemented into place between the main and the lateral stop-pocket.

In systems where the main intersects the heads of two laterals, leading in opposite directions at the same point, a stop-pocket is placed intersecting the main and a lateral taken from each side of the pocket.

The cost of installing the sub-irrigation systems of Florida ranges from $80.00 to $100.00 per acre exclusive of the water supply.

The Florida systems are mostly supplied with water from flowing wells which discharge directly into a bulkhead at the upper end of the main supply pipes, and the flow being controlled with common steam brass valves.

Wiggin's Sub-Irrigation System.

A system of sub-irrigation known as the "Wiggin's System" is being developed and promoted in Kansas and adjoining states. A company has been formed for the purpose of selling rights for installing the system and the leasing of their patented machines for making a continuous concrete tile.

The conditions under which the Wiggin's system is being tested are more representative of average farm conditions, but less favorable for free lateral moisture movements than those under which the Florida system operates. The soils and sub-soils are heavier and closer; the sub-strata are not as uniformly impervious; the lands are often uneven and rolling; the crops grown are not confined to one class, but all farm crops raised from the garden trucks to orchards regardless of their rooting depth.

Sub-Soiling.

The system is not designed nor used for drainage purposes.

Before the system is installed the promoters recommend the sub-soiling of the land. A plow having a special point and trailing a short piece of gas pipe, upon which the dirt falls, tends to leave a "mole hole" beneath the surface. This is done at right angles to the laterals of the system and at intervals of about four feet. Investigations indicate that "mole holing" the soil assists the lateral spread of the water in the beginning, but is not a permanent help unless repeated occasionally.

The Wiggin's System of sub-irrigation consists of a series of underground parallel pipe lines and an intersecting main supply pipe, in which water is conducted under pressure and injected into the soil through nozzles.

(Continued on Page 292.)

WARNING

To the Orange Grower

Insist on using only

Sulphuric Acid

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Acids made from waste fumes of the smelters contain arsenic, lead, copper and nitrous fumes, which are exceedingly dangerous to your trees, and may cause you no end of trouble.

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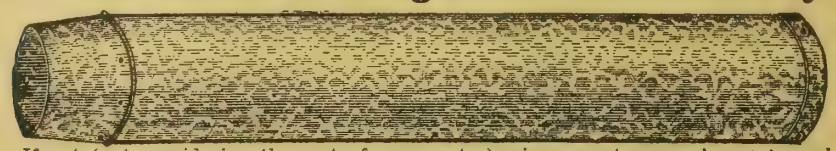

If not (not considering the cost of your water), give your trees a chance to make good by giving your orchard the proper amount of water all over same, and not three-quarters of your water supply within forty feet of your head flume.

The surface irrigating pipe we manufacture will remove this obstacle—will cut your water bill—is more convenient to use and will last a life time.

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Citrus and Tropical Fruits

MORE ABOUT PAPAYA.

By F. H. Bolster.

I read with interest the statements in regard to the papaya in your paper of September 14th. I was interested because during a residence of three and a half years in the tropics the papaya was one of my favorite fruits and I have eaten it in various forms.

Papaya salad is one of the most delicious salads I have ever tasted. It is used in a green state for this and is chopped fine together with the other ingredients of the salad.

The ripe fruit may be eaten with a spoon like a muskmelon is eaten. I think it is not generally liked the first time it is tasted, but after one has acquired a liking for it one can eat it every day as long as the season lasts. It contains a ferment which makes it very digestible.

The papaya has virtues enough without overstating them, as they were overstated in the article referred to. That the ferment when uncooked may have a certain amount of digestive action upon raw lean meat is probably true, but the amount is not noticeable. I have squeezed out the milk from the green papaya upon raw carabao meat and left this together with the fruit in contact with the meat for twelve hours, yet after that amount of time I failed to detect the least softening action upon the meat due to the papaya.

I have eaten green papaya cooked with meat very often. It is the general belief that cooking papaya with meat softens the meat. This is untrue. The softening claimed is credited to the ferment in the fruit. Now I am told by doctors and chemists that ferments are destroyed by heat. Therefore the ferment would be destroyed before it could cause any softening effects.

In the tropics the papaya is capable of withstanding most adverse conditions. While it responds to care and a fertile soil it is often found bearing its load of fruit hugging the trunk on the most barren and rocky soil.

There is a male papaya plant and a female papaya plant, the fruit being borne by the female plant. One can not tell which is the male plant or which the female plant till the first blossoms appear, which is when the plant is from six months to a year old. Now the most remarkable thing about the papaya relates to this matter of sex and seems incredible. If the male papaya plant is cut off smoothly at the surface of the ground as soon as the blossoms show the sex of the plant the shock seems entirely to alter its nature, and as soon as the shoot from the stump reaches bearing age, as it quickly does, most of the flowers will be female and produce fruit. I did not believe this until I actually saw the experiment tried, although the commonly accepted belief among certain Filipino peoples.—F. H. B., University Farm School.

DOUBLE YOUR CROPS.

By Ernest Braunton.

Ever since man first tilled the soil, the most serious problem offered him for solution has been to increase crop production, and all scientific study, intelligent methods and practice, in fact man's best effort, have been bent to the attainment of this end. Deep tillage, rotation of crops, increased fertilization, all are practiced today to a far greater extent than ever before, and to these has of late years been added the most potent factor of all—green manuring, or turning under (at the proper time) leguminous cover crops.

During late years, when the most intelligent practice has been in vogue, the greatest struggle has been toward procuring the necessary amount of nitrogen, that most precious and most necessary of all plant food; a struggle that has happily culminated in the improved handling of inoculated cover crops. It is now generally conceded that all milestones leading to perfect success have been passed, and we have now arrived at the goal of heaviest possible crop production. The up-to-date, top-notch grower now depends upon the nitrogen-gathering bacteria for his supply of this otherwise expensive element of plant food, and no longer pays heavy tribute to so-called "nitrate kings." In the early stages of development, when Dr. Moore, of the United States Department of Agriculture, was demonstrating the practicability of his wonderful discovery, proper methods of transportation of nitrogen-gathering bacteria had not been worked out, though even then few failures were recorded. Now, growers of every kind of leguminous crop may obtain these most necessary microscopic workers with the same ease and dispatch that his daily paper or a package of flower seeds reaches him. The discovery of a transparent jelly, devoid of nitrogen, in which the legume plants could be grown when supplied with nitrates by nitrogen fixing bacteria, and in which no other kind of bacteria could live, gave a perfect method, not only of selecting pure specimens, but of breeding up the organisms to secure those with the highest power of producing nitrates. Now you may carry home nitrogen fixing bacteria in your pocket or have the mail carrier deliver them at your door.

All the mystery that once seemed to surround this method of increasing crop production is now swept away, and all tillers of the soil know that the value of a legume crop, such as clover, peas, vetch, alfalfa, etc., as a means of enriching the soil, is due to the fact that certain kinds of bacteria which live on the roots of these plants have the power of taking nitrogen from the air and changing it into nitrates to feed the growing plant. They also form nodules, or storehouses, on the roots, in which large quantities of nitrates are held, to be released by the gradual decay of the roots, and thus make available for the use of following crops of other kinds. Every nodule is like a bee hive, full of industrious workers, making nitrates instead of honey. Nodules contain as high as 8 per cent of nitrogen; mixed stable manure only one-half of one per cement.

The amount of increase in crops caused by these bacteria almost passes belief, and if it were not that the United States Department of Agriculture has obtained the most phenomenal increase yet reported (1000 per cent), people could not believe the immense profits accruing from their presence in the soil, but Bulletin No. 71 sets all doubt at rest.

CARE OF LADYBIRDS.

Having query recently as to best way to encourage that little friend of the farmer, the ladybird, known to entomologists as hippodamia convergens, we wrote to the office of the state horticultural commissioner and Mr. Frederick Maskew, connected with the work of the commission and engaged for several months in the distribution of these insects, gives the following suggestions which we imagine are the first ever printed:

"In cultivated areas where our native species of ladybirds have been introduced in great quantities, or where they have naturally congregated in large numbers due to the presence in abundance of other insects suited to their food requirements, they are often found hibernating in shocked corn, loose corn stalks, or other debris in adjacent corn fields during the winter months that follow. Another favorite rendezvous for hippodamia convergens in the cultivated valleys of Southern California is the fields, or rows, of stock beets (mangel wurzel) that have been left growing throughout the winter. Underneath the dry, older leaves which cling closely to the upper part of the beet and among the bases of the leaf stems at the crown of the beet, may often be found large numbers of ladybirds of different species during late winter and early spring months. The natural selection of these localities would lead us to believe that they furnish all the requirements necessary to the successful protection of these insects during the hibernating period.

"I have no knowledge of any instance where either of the foregoing

have been especially used for the purpose of protecting ladybirds, but both of them are so simple that they might easily be tried as a test case. In the case of melon fields it would be a very simple matter to plant a dozen rows of stock beets along one side of the field and leave them in position until the melons were grown the next season. This method would not interfere with the cultivation of the field, as would an attempt to use bundles or shocks of corn fodder for the same purpose.

In regions adjacent to the hills in practically all parts of California, ladybirds, especially hippodamia convergens, promptly seek the recesses of the mountain canyons on the approach of winter, and it is doubtful in my mind if any attempt to provide artificial protection would overcome this force of instinct in such localities.

"While it is considered desirable that every means should be used both to attract and hold these valuable insects in the immediate neighborhood of field crops susceptible to the attack of aphids, it is well to remember that one of the functions of the state commission of horticulture is to furnish colonies of ladybirds to all producers whose crops are in a condition to need them. The state insectary as a result of long experience and experimentation has devised economic ways of collecting, packing and storing these insects in almost incredible numbers, and the available supply each season is limited only by the demand for the same. Colonies are delivered free of all charge, the express company carrying them free, in recognition of their valuable work in the production of larger and cleaner crops, and the only effort required on the part of the producer who expects to need the assistance of these insects during the coming season, is to send in an application and the extent of his plantings, before the expiration of the collecting season, which usually culminates the latter part of the month of February."

SCIENTIFIC CARING FOR FRUIT.

Dr. Surface, state Zoologist of Pennsylvania, says that plant pests are annually ruining property valued at $10,000,000 in Pennsylvania. That is good and sufficient reason why the state department of agriculture should send a special train over the state and try to save the orchards, by means of lectures by men who know whereof they speak and can give valuable information and advice for fighting the pests.

"Plant pests are chiefly of three great groups, each of which demands its own kinds of remedies and its own time of application. These are the plant diseases, such as the rusts, smuts, blights, mildews, leafspots, cankers and leaf-curl. Most of these are preventable rather than curable, and the successful art of the husbandman lies in applying the proper preventive material called a fungicide, because used to prevent fungi before the tissues of the leaf, fruit or other part commences to show injury by the disease. The standard fungicide and the one still generally acknowledged as the best is the Bordeaux mixture, made by mixing three pounds of bluestone, or copper sulphate, and four pounds of quicklime in fifty gallons of water. This will not kill insects, but will drive away a few kinds. It is properly used only to prevent plant diseases.

"The second great group of plant pests is that known as the chewing insects, such as worms or caterpillars of all kinds, potato beetles, wrongly called bugs, the codling moth and all others that eat the tissue of the plant. These can be destroyed only by the application of poisons chief of which are arsenate of lead, two pounds in fifty gallons of liquid, either water or Bordeaux mixture, and Paris green, one-half pound in fifty gallons. The former is preferred, as it stays on the plants and is effective so much longer.

"The third great group of plant pests is that comprising the sucking insects, such as all scale insects and plant lice. These are not killed by poisons, but by contact insecticides, such as the lime-sulphur solution applied when the trees are dormant, or kerosene emulsion, or one pound of whale oil soap in five gallons of water applied when the plants are in leaf. This is the essential outline of the chief features of pest suppression."—Green's Fruit Grower.

QUEER MORALITY.

Upton Sinclair, in a lecture in New York, condemned industrial or business morality.

"It is all wrong," he said, "but every one thinks it is all right. It reminds me of Tin Can.

"Once in a Tin Can poker game a tenderfoot saw a player give himself four aces from the bottom of the pack. The tenderfoot flushed with indignation. He turned to a Tin Can native and whispered:

"'Did you see that?'

"'See what?'

"'Why, that hound dealt himself four aces!'

"'Wall,' said the native, in a surprised tone, 'wasn't it his deal?'"

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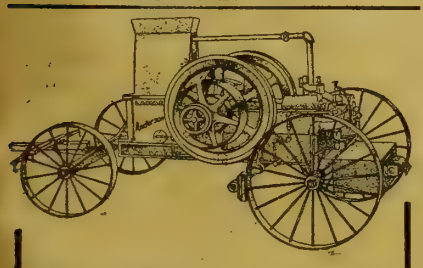

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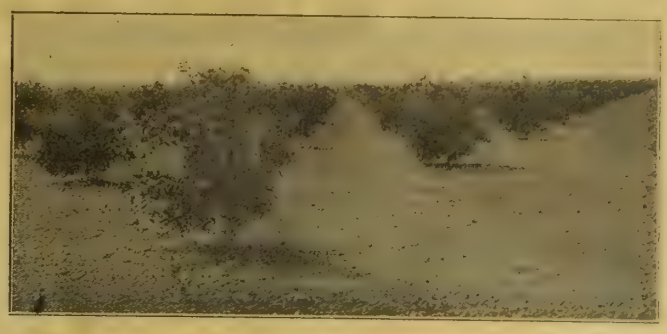

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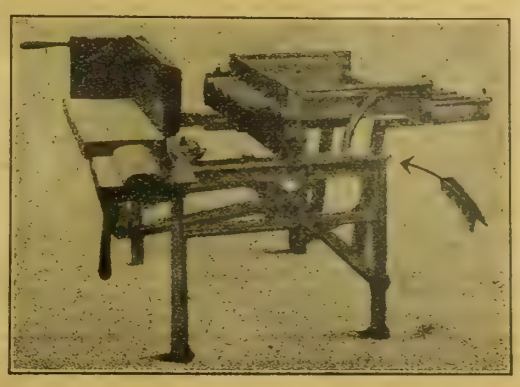

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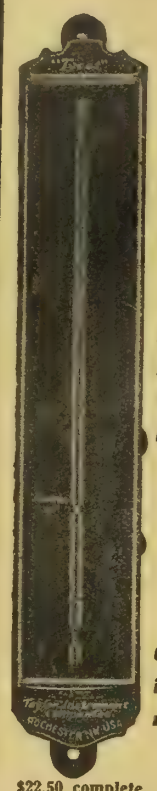

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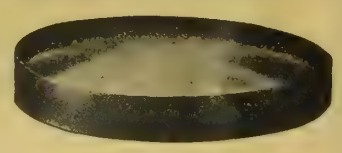

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WALNUTS—GREEN MANURE CROPS.

A subscriber having an orchard in the Santa Clara Valley writes as to green manure crops for walnut orchard and as to forcing such orchard to heavier bearing. The matter was referred to Mr. J. B. Neff of Anaheim and he writes:

Green manure crops of legumes are almost equally valuable per ton, so it becomes a question of growing the crop which produces the largest tonnage. Stable manure adds phosphorus and potash to the soil and has about the same amount of nitrogen per ton as is found in green manure crops. Leguminous crops add nitrogen to the soil but do not add potash and phosphorus. Green manure crops cost less per ton usually than stable manure. When leguminous crops cannot be grown and stable manure is not available, humus can be added and the mechanical condition of the soil improved very much by growing a winter crop of rye. All green manure crops should be plowed under when there is sufficient moisture in the ground to cause them to decay rapidly. The ground should be well firmed by running a disk harrow, set straight, over the ground as soon as the plowing is done.

"The walnuts should be gathered as soon as possible after they are ripe, rather than let them hang on the trees until they fall. In this way the green crop can be sowed earlier and will not require so much irrigation in the spring. Peas will grow in cooler weather than vetches, but usually do not make so much tonnage.

"Innoculation should be practiced on land which has not had crops of legumes. Soil can be taken from a field where the particular crop has grown luxuriantly and placed in a bucket. Then pour water over and stir, using water enough to have a few quarts more than the soil will hold. Allow the water to settle a few minutes and pour off the muddy water to use in dampening the seed for sowing. Do not dry in the sun but sow as soon as dry enough to handle. One quart of the water will inoculate 200 pounds of seed.

"Keep the soil always wet enough to have the trees in good growing condition until the nuts are gathered. In addition to the manure and green crops plow in 500 pounds per acre of 18 per cent superphosphate each year and keep the ground well cultivated.

"Walnut trees should also be pruned regularly and kept open so that light can get to the inside of the tree. All dead branches should be taken out and if proper thinning is done there will be but few of the inside twigs which will die. Walnut trees should not be headed back at any time, but the branch which needs removing should be taken out clean."

"WORLD'S GREATEST."

A peach grower at Selma puffs up over the performance of his ten-acre orchard and claims for it the world's greatest. We will not talk for him, however, but quote regarding the place of Mr. C. H. Schmidt from a communication in the Fresno Republican:

"'The world's greatest peach orchard,' are the words that Mr. Schmidt uses, when he speaks of his place and offers a defi for any one to show its equal. There are ten acres of peaches on the place, half of the acreage being planted to Tuscan Clings, and the remainder to Phillips Clings. The orchard is three years old, and already has the record of producing twenty-five tons of fruit last year, when the trees were two years old. This year the yield will be upward of fifty tons. This is a conservative estimate, because the Tuscans which are the lighter crop, have already been harvested and amounted to twenty-five tons.

"While Selma is proud of the showing made in this orchard, and naturally takes much credit for the possibilities of her soil, it is but just to give Mr. Schmidt liberal credit, too, because he is an ardent exponent of intensive farming, and that he is successful is evidenced by results he has accomplished. There is nothing new or wonderful, however, about his system. To begin with, Mr. Schmidt is quite extensively engaged in the chicken business, and at all seasons when possible, the thousands of chickens are permitted to occupy the peach orchard. Besides this when the orchard was first planted, Mr. Schmidt planted alfalfa between the trees, to loosen the soil. The alfalfa, which in itself yielded some profitable crops, and furnished green food for the fowls, was permitted to stand until this spring when it was plowed under the soil to furnish fertilizer."

"Not only does Mr. Schmidt challenge others to equal his ten acres of peaches, but he takes an interest in exhibiting it to others who are interested in peach culture with a view of producing more values from their orchards."

AN ALL-AMERICAN FERTILIZER.

The field force of the United States Geological Survey is prosecuting searches for deposits of minerals which shall furnish the three necessary elements of plant food that are contained in "complete fertilizer," namely, phosphate rock, nitrate salts, and potash salts. The Survey has already discovered and surveyed enormous deposits of phosphate rock, and 2,398,590 acres of public land containing phosphate, withdrawn at the recommendation of the geological survey, are now waiting legislation by congress to enable their development. In order, however, to insure an "all-American" fertilizer, regardless of importations from other countries, it remains to discover deposits of nitrate of soda and potash salts. As both of these minerals are readily soluble and are not to be found as "outcrops" like ordinary rocks, the mission of the Survey is not an easy one. Nevertheless, it is believed that the geologic conditions of the arid West favored the accumulation, during earlier periods of the earth's history, of both of these salts and that if these still exist in concentrated deposits it is only a question of search to discover them. Hardly anything could be suggested which would be of greater assistance to the American farmer than the discovery of commercial deposits of either of these necessary fertilizing minerals.

SUBIRRIGATION.

(Continued from Page 289.)

The promoters space the laterals from 30 to 60 feet apart, depending upon the type of soil. The laterals are constructed in trenches 20 to 24 inches deep by a patented machine, which builds a continuous concrete tile of small bore. As the water is carried in the laterals under pressure, the pipes are not laid on a continuous grade, but run at uniform depths parallel to the surface profile. At intervals of four feet holes are made in the top of the pipe when soft, and a small concrete nozzle inserted. Each nozzle contains a small hole, and projects about one-half inch above the shell of the pipe. The size of hole in the nozzle varies from the different pressures to come at different points in the system due to gravity heads. The nozzles are protected by concave concrete caps which saddle over the openings to prevent earth and roots from entering. The cap forms a cavity about the nozzle and is cemented fast to the pipe in such a way that the water is forced out along the sides of the pipe. The efficiency of this arrangement for keeping roots from entering the pipe has not been tested by time.

The main supply pipe in the Wiggin's System follows the high ground or the high side of the field, intersecting the heads of the laterals. The main is built of concrete with a machine similar to the one used for laterals, only for larger pipe. Holes are cut in the sides of the main for lateral connections which are made of concrete.

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The water is controlled in the Wiggin's System with a specially designed

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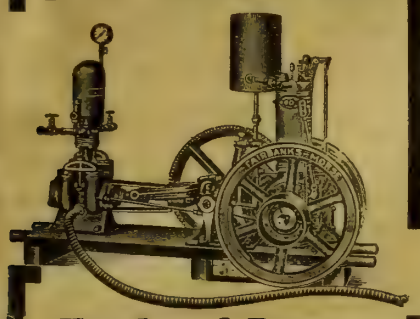

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valve at the head of each lateral. The water supply is usually pumped into a storage tank which is located at an elevation sufficient to produce some pressure on the system. The principal object of placing pressure in a system of this nature is to assist in the use of small pipes, and not for forcing water into the soil as one might be led to think. The more pressure placed in the system, the more water can be forced through a small pipe and out of the nozzles, but as soon as the water leaves the nozzle the pressure inside the pipe line exerts little influence over it. It depends here upon the capacity of the soil to take water, and if water is supplied faster than the soil can absorb it, the soil will become water-logged directly about the tile, or the water will waste downward.

The two systems of sub-irrigation outlined above cover the types of construction which have gained the most headway in the fields. Variations of these types have been installed by individual farmers, but their success has not led many others to adopt their methods.

The detail of construction best suited for injecting the water into the soil from an underground pipe, and yet prevent the entrance of growing roots has caused a great many different designs to have been tried. The writer believes it useless to attempt the sub-irrigation of deep rooting crops with tile or pipe having open joints or any unprotected openings.

The idea of using porous pipe is often advanced, but we have failed to find a construction which will give the proper degree of porosity, sufficient strength to stand earth stresses and yet keep out the roots. Porous pipe made from concrete tends to become less porous with age and use, also are subjected to the action of effective acids or salts in the water or soil which may cause them to break down.

A plausible construction for protecting openings in underground pipe has been advanced in the form of a porous concrete diffusion block. The block is shaped to saddle over a small opening in a pipe where it is cemented into place. It is sufficiently concave on the lower side to form a small water chamber between the pipe and block and about the pipe opening, the edges of the block resting continuously on the pipe in cement. Water coming from the pipe is forced through the structure of the block and not between the pipe and block surface. Water in this way appears on the outside in the form of sweat. The exposed surface of the block can be made in any convenient form. An oval block four by six inches and one and one-half inches in thickness has been adopted by the inventor. The block is made of screened small gravel containing sand and Portland cement, in proportions of about five of gravel to one of cement. The cement holds the stone particles together at their contact points, but leaves a very porous structure. Experiments tend to show that roots will not enter diffusion blocks made in this way, however sufficient time has not been had to give definite results.

Caution.

Farmers located in sections of scanty rainfall should adopt sub-irrigation with caution. The constant application of water to the sub-strata and its rise to the surface is apt to bring the accumulation of dangerous alkalis in the surface soils which in time may destroy the usefulness of the land for farming. In sections where there is a heavy rainfall at some period of the year, or where it is possible to flood the surface and the water can be drained off, the danger of alkali is not as great, but is a factor that should always be kept in mind in our western states.

Conductor—"Did you get out and stretch your legs when we stopped at the junction?"

Passenger—"Well, not exactly; I went into the dining car and had them pulled."

The New Girl—"An' may me intended visit me every Sunday afternoon, ma'am?"

Mistress—"Who is your intended, The New Girl—"I don't know yet, ma'am. I'm a stranger in town."

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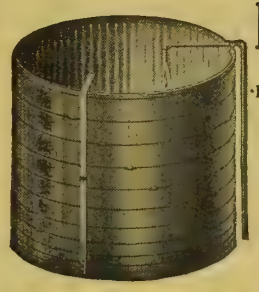

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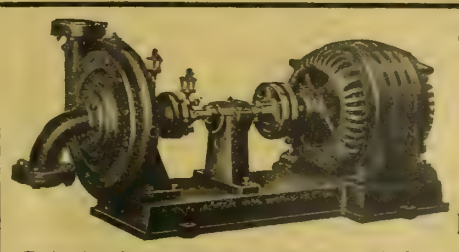

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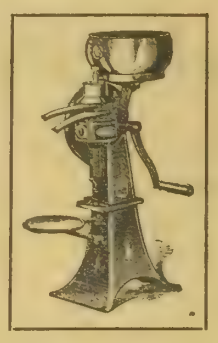

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You may prove all this by test to your own satisfaction. See the local De Laval agent or communicate directly with the Company.

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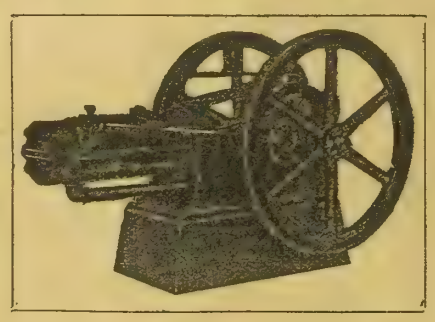

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Live Stock and Dairy

Dairymen and stockmen are requested to write of their experience. Mrs. Sherman is always willing to answer queries and this, with experience of other workers, will make this department of greater value.

CALIFORNIA DAIRY SCHOOL.

The regular Short Courses in Dairying will be given at the University Farm, Davis. These courses are for the benefit of California creamerymen and dairymen, and have proven very popular for those whose duties are so confining as to prevent absence for any great length of time. There is no one in the dairy business but who would profit by taking such a course, and everyone so engaged should plan to do so at some time. The work, while necessarily general, is very practical and applicable under ordinary conditions, and is given under the direction of those who have opportunity to keep up with the advancement of the science.

Dairy Manufactures.

This course, seven weeks in length (October 2 to November 18), is given for those interested in creamery and cheese factory work. It will begin with a study of the secretion and composition of milk, separation and handling of milk and cream, and will take up all phases of the work connected with the manufacture of butter and cheese. Aside from the class work, the time will be spent in the creamery, cheese factory, dairy testing laboratory and engine room, all of which are well equipped for properly accomplishing the object of the course. The approved methods of butter making, such as pasteurizing, ripening, use of starter and moisture control will be taken up, different kinds of cheese, including Cheddar, California and several soft, fancy types, will be made, and all of the more common dairy tests will be worked with. It is planned to pay special attention to dairy mechanics, such as pipe fitting, belt lacing, soldering, boiler and engine work, refrigerating machinery and motors. There will be demonstrations in dairy bacteriology, and a system of creamery accounting will be carefully studied.

Breeds, feeding and judging of dairy cattle will be interesting features.

Dairy Farming.

This course (Oct. 16-28) is intended especially for dairy farmers, and will cover essential points in the breeding, feeding, care and judging of dairy cattle, herd testing, the handling, pasteurizing, cooling and bottling of market milk and cream, the Babcock test and separator practice. All of these subjects are of great importance to dairymen.

CALIFORNIA HOLSTEIN BREEDERS.

By J. W. McAllister.

An event of great importance in the promotion of the interests of pure bred dairy stock in California took place during the Sacramento State Fair last week. The breeders of pure bred Holstein-Friesian cattle met and formed an organization known as the California Holstein-Friesian Association which will in a short time include three or four hundred members throughout the state.

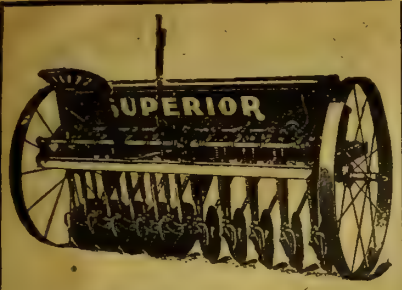
Dairy Barn, University Farm School.

Mr. Chas. Webb of Los Banos was elected president and J. W. McAllister, Jr., of Chino, was elected secretary and treasurer. Other members are the Los Angeles County Farm, the Vina Ranch of Stanford University, A. W. Morris and Sons of Woodland, C. N. Brown and Son of Porterville, P. H. Davis of San Anselmo, S. K. Herzog Co. of San Raphael, T. J. Gilkerson of Stratford, L. A. Hall, San Jose; A. B. Kendall, Modesto; J. W. Benoit, Salida; H. E. Cornwell, Modesto, and F. Stenzle, San Lorenzo.

Buildings on University Farm.

It was decided to ask every person in the state interested in Holstein cattle to join this association, rather than restrict it to owners and breeders of only the pure breds because it is the desire to encourage and bring those dairymen and farmers with only the grades to see the benefit and the greater profit to be derived from the pure bred. California has in the past taken a second place as a dairy state and many of those who pioneered in the breeding of pure bred dairy cattle became discouraged and left the field, but the people are beginning to realize the superiority of the pure bred and especially the superiority of the pure bred Holstein over all other breeds and it is one of the objects of this association to foster and nurse this growing interest and put California in her right place amongst the great dairy states.

A dairy farm near Tulare now being fitted up gives promise of being the finest equipped dairy farm in the state



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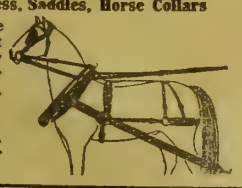

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By B. A. R. Stocker.

There are several points about the Nubian goat that commend it above all others for subtropical California, where it should thrive to perfection. Some of these points appeal particularly to the woman fancier.

The Nubians are much the largest breed of goats, and the most gentle and peaceable of any, easily contented in a small range. They are hornless, though, as in all breeds, occasionally a kid is born with horns. They have clean, close coats, with never any smell. The does are very prolific. Of them such astonishing yields of milk as eight to eleven quarts are recorded, and this milk is the creamiest in the world.

They have beautiful, long, drooping ears, very fine in texture. As to color, there is considerable latitude. The one I have is copper red, with a little white in his tail. Some are deep red tan with black points; some dappled like a fallow deer; some pied black and white, or red and white, with other beautiful combinations. But the type remains. So there is not the monotony to which we should have to resign ourselves if we knew beforehand that all the kids next spring would be, say, white.

Nubians have been bred in England for many years; and there is no doubt that they will do much better in California, with the right kind of care. But at present they are extremely scarce.

RACES AT STATE FAIR.

By J. A. Filcher.

Editor Cultivator: I have read your comments on the late State Fair, and on the whole they are just. You, like many other writers, however, seem to criticize the discrepancy between $10,000 for a race and $25 for a first prize bull. You forget that the difference is this: The horse men put up the $10,000 in entrance fees, and then go in to see who gets most of it back again, while the $25 given to the best bull, as with all other prizes, comes out of money appropriated by the state for premiums. The races are really contests among the horse men for their own money. In the case of the $10,000 race the total entrance fee for each horse when fully paid up amounted to 5 per cent of the purse, or $500. On the start there were thirty horses on which the first payment was made, and enough remained in or kept paying until the total sum received by the society for this race was $10,920. Hence you will see, Mr. Editor, that this particular race afforded all the interest and drew to the fair all the people you so graphically describe, and netted the society $920.

I trust you will publish the explanation as information to the many good people who seem to think in these fat purses the society is giving away the state's money in $2,000, $5,000 and $10,000 chunks.

Don't "dope your barbed wire or other cuts on stock. It is far better in most cases for farmers to merely protect from flies, leave wounds alone, and give them a chance to heal. This cleanliness and let-alone policy is infinitely better, in ordinary wounds, than most of the common treatments used. Farmers who try it will be surprised at the results in ordinary cases. Ordinary cuts and torn wounds, that drain freely, as a rule need very little washing. Most wounds that are doped heal in spite of the treatment—not because of it.

The Iowa Experiment Station located at Ames is issuing a bulletin on "Filling the Silo," and we have a circular which says it may be secured by writing to the station. We are not certain that this applies to out-of-the-state dairy people, but doubt not that if California dairymen should write they may secure information as to requirements for getting this valuable bulletin.

Chicago is now in line with a cold storage law compelling labeling of storage eggs as such. Violation of the ordinance calls for $50 to $500 fine.

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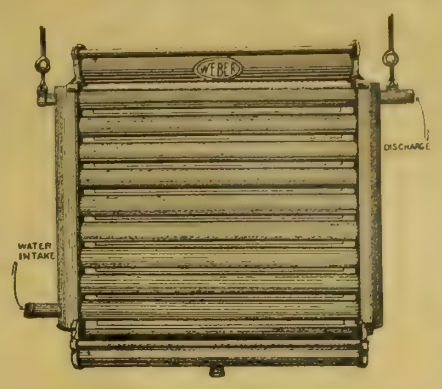

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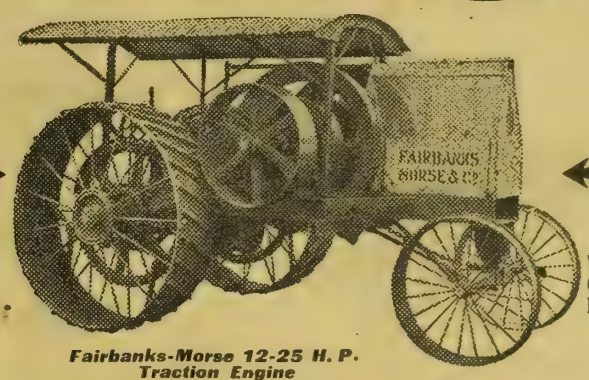

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In one season the Clipper will drive them all out.

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its agriculture they might well have seemed irresistible. England's neglect of the primary and most indispensable source of wealth and welfare, the land, has been rather a blunder than a crime. The nation never anticipated that the result of opening its ports would be the decultivation of some four millions and a quarter acres of arable land and the reduction by at least a half of the working population on the soil. It was assured that the English farmer could never be deprived of his "natural protection," and that he must always have the first and biggest share in the growing industrial prosperity of the country. Things turned out differently, and the nation never had a chance of deciding whether it desired to destroy its most indispensable industry and to become dependent on oversea importation for nine-tenths of its wheat and for three-quarters of its general food supplies.

But the British capitalists would not put their money in the industry, and the abandonment by the people of the rural districts to so great an extent present conditions that have prevented the English people from making the sugar that they consume so largely.

In very much the same way there has been in this country a strange but apparently characteristic hostility to the growth of sugar in the southern part of the United States, and in all likelihood the production of cane sugar would have been driven out of existence but for the extensive growing of beet sugar in those Northern States that are largely peopled by Norwegians, Swedes and Danes. They have been influential enough to protect their own industry in congress, and by consequence they protected ours.

There is growing up in various parts of the South a disposition of most strange unfriendliness to the cane sugar growers of Louisiana, Texas and Florida, but it is not strong enough to destroy the great southern interests that have grown into great importance in the past few decades. The Democratic party is no longer a free-trade party. It must regard actual conditions rather than ancient and obsolete questions, which, however, important once upon a time, are mere abstractions now. Moreover, the United States, with its ninety-three million population, is still a great English-speaking nation, but no longer English descended. Many diverse elements have been mixed in its melting pot, and the product is American, not English.—New Orleans Picayune.

GROSBEAKS AID AGRICULTURE.

The grosbeak is a very much maligned bird and instead of being destructive to crops he is, on the contrary, of great benefit, according to Farmers' Bulletin 456, just issued by Secretary Wilson. The bulletin states that seven kinds of finches, commonly known as the grosbeak, summer within our boundaries. A majority of these are good friends of the farmer and deserve to be widely known in order that their services may be appreciated. The grosbeaks are easily distinguished from other finches by their stout form, bright plumage, massive bills, and melodious voices. Two of them live mainly in cold, mountainous areas and have little to do with farms or with the insects that prey upon crops, and these may be dismissed without further notice. The other five live largely in agricultural regions and secure most of their food about cultivated lands. They perform invaluable service in destroying certain of our worst insect pests.

The rose breasted species is a great destroyer of the potato bug. He breeds over Kansas and the mountains of Tennessee. The investigations of the department show that the bird is fond of green peas, but invariably consumes enough injurious insects to more than offset the damage. He has become famous for his preying on the Colorado potato beetle and no less than one-tenth of the total food it consumes has been proven to be the potato beetle. It attacks the cucumber beetle. It has proven an active enemy of the Rocky Mountain locust during that insect's ruinous invasions, and among the other pests it consumes are the spring and fall cankerworms, orchard and forest tent caterpillars, tussock, gipsy, and brown tail moths, plum curculio, army worm, and chinch bug. In fact, states the bulletin, it attacks the worst enemies of agriculture.

The cardinal or redbird species ranges from southern Mexico, lower California, and Arizona, north to Iowa and Ontario, and east to the Atlantic Coast. They are permanent residents, spending the summer and winter in the same locality. It has been claimed that they pull sprouting grain, but no evidence of damage to either grain or other crops is shown from over 500 examinations. On the contrary they do much good. They feed on locusts, periodical cicada, the Colorado potato beetle, the rose chafer, cotton worm, plum or cherry scale, the zebra caterpillar of the cabbage, the cucumber beetles, billbugs, locust flea-beetle, corn-ear worm, cotton cutworm, southern figeater, codling moth, and boll weevil, and, in addition, are great consumers of injurious weed seeds.

The black-headed grosbeak hails from southern Mexico and invades North Dakota and Nebraska. It fills the same place in the West that the rosebreast does in the East. It is a foe to the worst pests of horticulture, the scale insect composing a fourth of its food.

The blue grosbeak breeds over the southern two-thirds of the United States and is greatly destructive to weevils, grasshoppers, locusts, caterpillars and worms.

The gray grosbeak inhabits Texas, Arizona and New Mexico. It is a consistent enemy of the boll weevil and cotton worm. It also consumes great quantities of harmful weed seeds.

The bulletin winds up with a plea for the protection of the grosbeak, and says: "Present investigations prove that the services of the grosbeak in destroying insect pests are invaluable. Each kind pays especial attention to certain pests which if unchecked would cause enormous loss. Few of our birds are to be credited with more good and with fewer evils than the grosbeak and none more clearly deserves protection by the practical farmer."

DISCOVERY OF THE YOSEMITE.

With stories of Indian warfare and examples of treachery of Indians filling many pages, a book recently published is sure to be read by many who like the thrilling. The book in question is "The Discovery of the Yosemite," written by L. H. Bunnell, M.D., one of the discoverers of the Yosemite Valley. Dr. Bunnell's book has passed through three editions and is now being offered in the fourth with a series of finer engravings than shown with any former edition.

Incidents leading to the discovery of the Valley are given with the story of the formation of the Mariposa Battalion, causes of the war with the Indians, and the march of the battalion into the mysterious valley. The name Yosemite, its origin, significance, and pronunciation, is given an entire chapter. The especal effort of the writer has been directed toward the placing on record of events connected only with the discovery of the Valley and the naming of many of its prominent features. He disclaims power to adequately describe its scenery.

The book is published by G. W. Gerlicher of Los Angeles and is worthy of a place in every library.

WATERPROOF GLUE FOR WOODEN DISHES.

Soak ½ pound of best glue in cold water until quite soft, melt in glue kettle. When quite dissolved, pour in 1 ounce of hot saturated solution of bichromate of potash and well stir. It is now ready for use; apply with brush. Put the article so treated to dry in full daylight for a day or two, and then apply strong alum solution. The vessel is now ready for use, but must be washed first.

The International Cotton Congress at its recent meeting in Barcelona, Spain, decided that the members of all associations affiliated with the general body should buy at least a part of their cotton on the basis of net weight, and so oblige the American planter to adopt a new system of baling and preparing cotton. It was determined to appoint a special committee to study the form for a universal contract suitable for the seller and the buyer.

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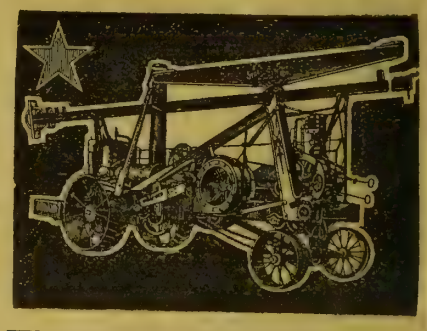

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General Agriculture

COTTON CULTIVATION IN THE TRANSVAAL.

Reporting to the State Department at Washington on cotton cultivation in the Transvaal, Edwin N. Gunsaulus, United States Consul at Johannesburg, says:

"In the February number of the Agricultural Journal of the Union of South Africa considerable space is devoted to cotton growing in the Transvaal, an industry which for some time has been receiving the close attention of those in charge of the cotton division of the Agricultural Department of the Union.

"That the Transvaal possesses large areas of land especially well suited to the production of cotton is an accepted fact, and experts have devoted considerable time in efforts to induce farmers whose lands are situated in those parts of the country where favorable soil and climatic conditions exist to give the plant a fair trial. These efforts, it seems, have been attended with no small measure of success.

"Prizes for Transvaal grown cotton were offered by the Witwatersrand Agricultural Society at its annual exhibition held in Johannesburg in April and May, 1910, and many growers competed. The samples were sent to England and were judged by the British Cotton Growing Association, the first prize being awarded to a farmer in the Zoutpansberg district. All of the samples were favorably commented upon by experts in the center of the cotton manufactories of the world.

"A yield test made with one of the varieties (Bancroft) of last season's crop at the Rustenberg Experiment Station showed forty-three bolls to the pound. This is considered very good when it is remembered that until this season no systematic experiments had ever been conducted in the Rustenberg district. The results of the experimental work at Rustenberg are regarded as proof that the cotton belts of the Transvaal extend even beyond the borders of the low veldt. This is taken to mean that the source of supply will in time prove almost unlimited, instead of being confined entirely to the low veldt, as was the general impression a few years ago.

"Results at the Barberton Experiment Station have also proved highly satisfactory. Some of these results are as follows: Yield of seed cotton per acre, Doughty Big Boll, 1,292 pounds; Black Rattlin, 1,272 pounds; Cook's Long Staple, 1,224 pounds.

"At the Tzaneen Experiment Station, in the Zoutpansberg district, the results are said to have been equally satisfactory. Next season it is proposed to produce a commercial crop of cotton of about 500 acres at this station.

"Estimating the total cost of production per acre at $9, and the value of the yield at $30, it is figured that the Transvaal cotton grower should realize a profit of $21 per acre on the crop, notwithstanding the fact that allowance must be made for the expense of shipping to England, which would be slightly higher than the cost of shipping to that country from the United States. Altogether it is conceded that the South African grower cannot hope to realize quite as much for his cotton crop as does the American grower; nevertheless it is thought that the industry, once established, will prove a commercial success.

"In order to afford a proper outlet for the products of the Zoutpansberg, which is the largest district in the Transvaal, about 360 miles of new railway construction is proposed by the government. This new line will serve what will probably prove the largest cotton belt in the Transvaal, while the railway mileage to the coast will be reduced by about 200 miles."—Market World.

A QUESTION ABOUT SUGAR.

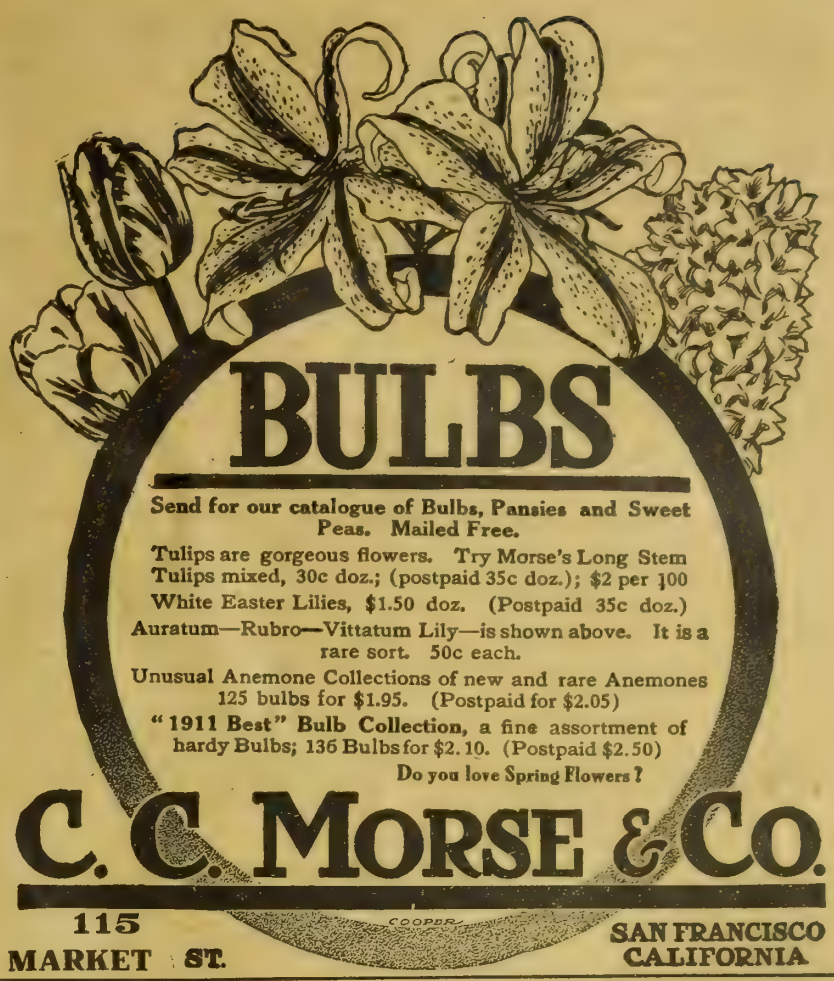
A singular notion has been put forth by an English writer in an English magazine (the Nineteenth Century) that while the English race of people are the greatest consumers of sugar in the world, they prefer to buy it from strangers, when they could make it to the greatest advantage. Even in the tropical possessions of Great Britain, where the sugar cane is a natural product, comparatively little sugar is made.

But in all the countries of the warm zones of the earth, where they were settled by the Latin races of the whites, French and Spanish peoples, the making of sugar is the chief agricultural industry. It is doubtful if any sugars would ever have been made in any part of the United States if the entire region had been settled by peoples from the British Isles. But it happened that Louisiana's first white people were French, while the Spaniards took possession of Texas and Florida, and when they learned what cane sugar was and how to make it they quickly adopted the culture of the cane and the extraction of its product, and they have kept it up despite active efforts on the part of their fellow-citizens to discourage and even to break down the industry.

The people of the United States consume sugar to the extent of ninety pounds to the head of population. The English people have about the same per capita consumption. Among the nations of Europe, Germany comes next with a consumption of between thirty and forty pounds per head. England, then, is by far the biggest sugar consumer in absolute quantity of all the European peoples. In 1909 England imported 1,760,157 tons of sugar, of which 292,393 tons were from the cane. Last year (1910) it imported 1,728,730 tons, of which 562,165 tons were cane sugar. The value of England's total imports in 1910 was £24,579,489, that of its beet sugar imports alone being £16,890,144.

These figures are given in face of the fact that a great part of the sugar consumed in the British Isles is made from beets in Germany and Austria, and could be made in England if the people there were willing to do it. But the wonder of any reflecting person is increased when he considers what such an industry would mean to that country. If it produced only a million tons of the year sugar consumption, which should require more than half a million acres of land permanently under the crop, three hundred factories, representing a capital of some £30,000,000, would be required to extract the sugar. These factories, built in the heart of the acres supplying their vats and pans with the sugar roots, would find work and wages for over 100,000 persons. Subsidiary industries without number would be created or stimulated by the new industry, and another 100,000 persons might thus be provided with work. At the same time a new class of agricultural laborer would be brought into being. All the profits and wages of this new big industry would be spent in the country, to the great indirect advantage of all its interests, and these million tons of home-made sugar would mean a recolonization of the depopulated shires and villages with many hundreds of thousands of newcomers settled in healthy surroundings and economic comfort. It is a question whether the country can afford to be so philanthropic as to forego such a source of industrial power and social welfare.

The inducements to naturalize the industry would in any case be powerful, but in the case of a country whose rural interests have terribly declined, and whose greatest need is to revive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MAGAZINE FOR THE ANGORAS

The Angora goat has become important enough in the Northwest that believers in the future of this animal have established the Angora Goat Breeders Journal. A great deal of mohair is being produced in the Northwest and we doubt not this specialty has become extensive enough that the journal is demanded. Special reference will be given to the milch goat as well as the Angora goat. The paper is published in Portland, Ore.

BEARING THE MARKET

Florida orange growers are in arms because of some trade papers persistently reporting an immense crop of Florida oranges for the coming season. Reports have been sent out that the output will be one million boxes in excess of last year. The growers maintain it will not exceed last year if it equals it. Some place the output at 75 per cent of last year's, and the grapefruit will be not more than half a crop. Some sections report grapefruit as 75 per cent short of last year.

HIGHER PRICES.

According to the summary of the Department of Agriculture's bureau of statistics prices paid to farmers in the United States on September 1, compared with September 1 last year, for potatoes averaged 56 per cent higher, barley 34.6 per cent higher, hay 23.1 per cent higher, oats 5.2 per cent higher, rye 3.8 per cent higher, buckwheat 1.9 per cent higher; corn .6 per cent lower, chickens 6.7 per cent lower, flax 7.5 per cent lower, butter 8.3 per cent lower, egggs 10.3 per cent lower, wheat 11.5 per cent lower, cotton 18.1 per cent lower.

KILLING OF SPARROWS

On the poultry page of this issue is an article by Mr. J. H. Davis of Petaluma in which he makes an appeal for protection against the pest which is becoming a menace to the State. It is nothing less than the English sparrow which has been a factor in most eastern states and which Californians have hoped would never cross the Rockies. But the pest is here and good and plenty in several portions of the state. Already campaigns have been organized in some sections. It was noted in Mr. Davis' article that these birds not only destroy growing crops and drive away other beneficial birds, but even steals away the food of poultry. These birds will more than double every year, from which it may be seen that they will become a veritable plague within a very few years unless some steps are taken to control them.

CO-PERATE

The value of co-operation is being proved more and more every year. It is worked more successfully with orchard fruits or with the people who grow orchard fruits than with the general farming, but with alfalfa people, lima bean people and now with sugar beet people getting into line it looks as though its benefit were being appreciated more and more. The lima bean people especially have shown its great value and the very satisfactory indication is that we note in daily papers the statement that bean buyers are "lying low." The probabilities are they find themselves unable to bully-rag the organization with a business head, and so they will endeavor to run the bluff of going into retirement until the bean growers get anxious. That policy will work with disorganized forces, but when the producers put their whole crop in the hands of one strong central organization, stampeding is not so easy.

PAID ITS WAY

On another page is a correction written by Mr. J. A. Filcher, Manager of the California State Fair. All the Cultivator formerly said in comparing the $10,000 purse offered on a single trotting event with premiums offered for fruit display was true, but Mr. Filcher calls attention to the fact that the $10,000 purse on the trotting event more than paid for itself. We realize that such events are strong drawing cards and as Mr. Filcher says, the direct percentage entrance fee proved profitable, so the implied criticism was to a certain extent unjust though unintentional. All who wish well to agriculture in this state long for an Agricultural Fair which will give due prominence to our greatest industry. The races and many of the vaudeville events attract the crowd and we still fear are given undue prominence, but at the same time we realize the management is up against financial and other problems in handling this great show.

SCRAPPING OVER WATER.

The unsettled condition of California water rights is being proven again by litigation which promises to be long and expensive, but only just started between Riverside and Redlands irrigators. The Redlands people seek to restrain the Bear Valley Company from diverting waters of Bear Creek, which is a tributary of the Santa Ana River. The Redlands people claim the right to these waters because of filings made thirty years ago; the Riverside people claim them under riparian rights. We doubt whether there will ever be laws so perfect that some litigation will not be necessary, but sure it is, California's laws are in such a condition that expensive litigation seems to be necessary to determine almost every right. The revision which was attempted several years ago failed because of fear of some old companies that their established rights might be jeopardized. It is to be hoped that the coming session of the legislature will find some way of overcoming these objections and that a more satisfactory condition of the statutes of California will be secured.

BEAUTIFY THE ROADWAYS.

Mr. Ernest Braunton, executive officer of the Los Angeles County Forestry Commission, informed us that the Los Angeles board of supervisors has granted $25,000 for the use of the board during the coming year. Something over $19,000 of this will be for the purchase of trees and their maintenance along the roadways of the county. This is, we believe, the most advanced step which any county has taken in this state, and we trust it is only the first in that county and that it will prove an inspiration to others to go and do likewise or better. The cities have been more advanced in appreciation of the commercial value of roadside beauty than have country districts. Civic Improvement societies, Chambers of Commerce and Women's Clubs have taken steps along these lines in many of the towns of the state. Some country districts have also shown great interest in the matter, but they should have better appreciation of the value of such work. This Los Angeles County appropriation is for use outside of the incorporated cities. The $19,000 will doubtless be the cause of as much more being used on the roadsides of that county. That is, where certain districts show a disposition to plant their own trees, this fund will be used to encourage it by guaranteeing best of care for the trees once they are planted. The eyes of the world are on California. Let us show that we appreciate it by a general tidying up.

BEET GROWERS ORGANIZE

Sugar beet growers of Southern California have been somewhat restive under the prices which have prevailed for sugar beets, and watching the ever increasing price of sugar they decided it was time to strike for at least a slightly increasing price of beets. Different sections have been organizing for some weeks and delegates for these local organizations met in Los Angeles on Saturday the 23rd, at which time owners or business managers of some of the sugar factories met and discussed the situation. Heretofore the price of $5.00 per ton for 15 per cent beets has prevailed, with higher and lower prices according to the sugar content. The growers have demanded a $5.50 price for 15 per cent beets with a 30-cent reduction for each per cent loss of sugar, and for 16 per cent beets $5.80, for 17 per cent $6.10, for 18 per cent $6.60. (this it will be noted is a 50c increase) for 19 per cent $7.10, for 20 per cent $7.60 and for 21 per cent beets $8.35. From this it will be seen that the price increases in a greater ratio than the sugar content. It is declared that is wise for the higher percentage of sugar makes more economical sugar production. The growers were met by the most responsible men connected with the sugar manufacture of California. Apparently they realize the justice of the growers' demand, and it is to be hoped that all that is demanded will be granted. The growers have determined not to sign contracts for next year's crop until the matter is settled. Approximately 45,000 acres are represented in the organization.

AN OPTIMISTIC VIEW

It was our pleasure to have a few moments' chat with Mr. W. S. Guilford, Director of Agriculture of the Sacramento Valley Irrigation Company of Glenn and Colusa Counties. Mr. Guilford has just finished a six weeks' automobile trip in practically all of agricultural California. It was in connection with experts of the Department of Agriculture, Messrs. Mills and Evans of Riverside, and Mr. A. H. Grubb, Consulting Agriculturist for Mr. Guilford's company. These gentlemen took this trip for the purpose of getting a general view of agricultural conditions in California and learning by actual contact with those conditions lessons which would be of value to them. The trip covered the coast counties from San Diego to San Francisco, thence inland across the Valley up to Lake Tahoe; thence back and into Nevada County and up the east side of the Sacramento Valley to its head; thence down the western side into Lake and Sonoma Counties, across the Bay and down the San Joaquin Valley and again into Southern California. Every phase of agriculture in this state was inspected. Mr. Guilford said the most interesting lesson of the great trip impressed upon the mind of each member of the party was the bright outlook for agriculture in this State. We have only the beginnings of agriculture, for there are thousands upon thousands of acres awaiting development. The degree of intelligence manifested by California farmers is such that this development will be very rapid, but as great as the intelligence is Mr. Guilford said the great and crying need in all sections was for a better grasp of the problems of soil tillage.

Agricultural News Notes of the Pacific Coast

Northern California

Butte County's rice crop is ready for the harvest.

Butte County is shipping figs to Eastern markets.

The farmers short courses begin at Davis next Monday.

The Butte County Fair opens at Chico next Tuesday.

Butte County's orange crop is a third larger than usual.

Some hops have been sold at Sacramento at 41 cents per pound.

The almond crop of the Sacramento Valley is practically all gathered.

Palermo, Butte County, reports oranges will be fully as early as usual.

Susanville, Lassen County, has an organization of good roads boosters.

The dairy animals at the Napa State Hospital are suffering from anthrax.

The bean harvest in the river district of Sutter County is nearing its end.

Serious forest fires did much damage near San Rafael, Marin County, last week.

Dairymen at Ukiah, Mendocino County, are building their first silos this season.

Sonoma County Pomona Grange held a session at Santa Rosa on Saturday the 16th.

The alfalfa meal mill at Woodland is running full capacity and turning out 40 tons daily.

A peculiar worm similar to the army worm is attacking orchards of Grass Valley, Nevada County.

A poultryman at Haywards, Alameda County, has imported some White African Guineas.

Thirty thousand acres of rich land near Alturas, Modoc County, is to be reclaimed and subdivided.

The Country Life Commission is making extensive preparations for a great day at Davis Oct. 14th.

Peach growers of Butte County are holding much of their fruit in the hopes of better prices later.

One hop farm near Wheatland, Yuba County, has paid out more than $40,000 to pickers this season.

Seven hundred beef cattle were delivered to San Francisco by a Butte County stock raiser last week.

Hop pickers on a big ranch near Chico celebrated the close of the season with a barbecue and dance.

A deputy state veterinarian has condemned several horses because of glanders at Nevada City and Downeyville.

People at Haywards, Alameda County, are in arms over the effort to "steal the game farm" and remove it to Folsom.

Farmers of Alameda County settled upon Wednesday the 20th as squirrel day and a wholesale slaughter was the result.

Governor Johnson has appointed delegates to attend the conservation congress which is being held in Kansas City this week.

The reclamation of the great Yolo Basin, near Sacramento, which has been discussed for many years, is one of the biggest projects in the state. It will involve the expenditure of about $15,000,000.

Central California

Stanislaus County is appealing for better roads.

Porterville has shipped 200,000 bags of grain this season.

The Pajaro Valley has already shipped 200 cars of apples.

The first car of grapes from Turlock was on September 15th.

Madera has formed a boosting organization in a new Chamber of Commerce.

The prune harvest of the valley is practically over and curing is in full swing.

A Selma peach grower reports an average return from his orchard of $489 per acre.

Lindsay and Lemon Cove, Tulare County, shipped 850 cars of oranges for the season.

San Jose held a Pure Food Show last week with over 150 exhibits of California pure foods.

Dinuba, Tulare County, growers are selling grapes to wineries at ten to twelve dollars per ton.

The State Fish Commission recently sent its fish distributing car to Inyo County with 180,000 trout.

A Fresno melon grower claims he has a fruit which is a cross of the watermelon and the muskmelon.

The new town of Patterson in Stanislaus County has a local paper established in the Patterson Irrigator.

Japanese grape pickers in the district around Dinuba, Tulare County, have been replaced by white laborers.

Most of the peaches have passed into the hands of the buyers, and the few remaining will command a good price.

Patterson, Stanislaus County, proposes to have a model dairy barn which will be one of the finest in the state.

The Kings County Fair, which will be held next week, gives promise of being the finest exhibition ever held in that county.

One cattle buyer claims he has shipped over $600,000 worth of cattle out of the Porterville district since the middle of April.

The Chowchilla Ranch in Madera and Merced Counties containing 110,000 acres, has been purchased for colonization purposes.

The San Joaquin Valley Exposition Association was recently organized at Fresno and will plan for an exhibit at the Panama Pacific.

A number of Stanislaus wheat producers are discussing the advisability of sending a representative to Australia to secure better wheat seed.

County Commissioner Volck of Santa Cruz County has issued a report for August giving particular attention to wooly aphis, codling moth and premature fruit dropping.

The San Joaquin Valley Table Grape Growers Association has filed a complaint with the Interstate Commerce Commission against the Southern Pacific because of alleged discrimination.

An effort to create a Wright Irrigation District to take over the system of the South Stockton-Mokelumne Ditch Company at Woodbridge, San Joaquin County, has failed because of opposition.

Southern California

Ventura County is raising a large good roads fund.

The Anaheim sugar factory is receiving beets at the rate of 25 cars daily.

Walnut growers are finding that nuts will be earlier this season than last year.

The Tri-Counties Reforestation committee will hold its next meeting at Redlands Oct. 5.

Extensive improvements are being made in the Highland Orange Growers Association packing house.

A contest is on between the irrigators of Riverside and of Redlands for flood waters of the Bear Valley.

The El Cajon Valley in San Diego County, is developing more water every week by installing of pumping plants.

The government engineers are surveying for an irrigation system for the Indians on the Yuma Indian reservation.

The Fullerton-Placentia walnut district will produce over two hundred thousand dollars worth of walnuts this season.

The celery crop at Talbert, Orange County, promises to be unusually good this year. So far no spraying has been necessary to prevent the blight.

The residents of El Cajon Valley, San Diego County, are so pleased with their annual fruit day that an effort is being made to have it a regular institution.

The beet growers of Southern California held a meeting in Los Angeles last week to discuss the matter of a co-operative organization which may be a factor in securing better prices.

Imperial Valley irrigators are discussing a new "High line canal." which shall take out its waters from the Laguna dam and through a cut in the sand hills entirely on American soil.

The fall meeting of the Claremont Pomological Club will be held in Ganesha Park, Pomona, September 25. Senator Lee C. Gates will be present and discuss the amendments to the state constitution, and it is hoped that Governor Johnson will also address the meeting.

The Citrus Association of Upland, San Bernardino County, at its recent annual meeting showed a total shipment for the season of 349,075 boxes of fruit. This is equivalent to nearly a thousand carloads, or over two hundred cars in excess of last season. The total to the growers was over a half million dollars.

County Horticultural Commissioner S. A. Pease of San Bernardino, corrects our former item in which we stated that he had 21 inspectors constantly in the field. He says: "I wish to state that I have only ten inspectors appointed in the county, and only two of these devote their whole time to the work. Outside of these we employ a number of field inspectors during the fumigation season to plat orchards, locating trees infected with red or yellow scale where the infection is scattering. And I may add that our fumigating season is practically from September 1st to January 1st of each season."

The Coast

Idaho prune drying plants are working overtime.

A large Angora goat farm will be established at Maxim, Ore.

The 1911 grain crop at Sheridan, Oregon, is the largest ever.

Hundreds of acres of walnuts have been planted near Canby, Oregon.

The farms of Oregon will produce $100,000,000 in farm products this year.

Hundreds of acres will be planted to walnuts during the coming season at Canby, Ore.

An apple grower near Medford, Oregon, has just sold his crop of Wealthy apples for $1,000.

The Olympic Peninsula Fair Association held its first annual fair at Port Townsend last week.

A Prescott, Ariz., farmer has found sorghum to be an excellent aid in wiping out Johnson grass.

Experts from the department of agriculture are examining as to potash deposits in Lake County, Ore.

The public service commission of Washington has established standards governing the grading of hay.

Hop growers at Chehalis, Wash., report excellent crop and of course the prices are all that could be desired.

Wenatchee, Washington, is shipping thirty cars of peaches daily. They are netting growers about fifty cents a box.

September 16th saw the greatest amount of wheat change hands in Walla Walla, 75,000 bushels being sold that day.

A movement is on foot to establish the Pacific highway to extend from British Columbia to the Mexican line at Tia Juana.

Sheep men at Lacrosse, Wash., are complaining because of heavy losses from sheep being poisoned by weeds on the ranges.

The Inter-State Commerce Commission is hearing complaint as to the rate on wool from points in New Mexico and Arizona.

The peach crop of Davenport, Wash., has practically all been harvested, the growers receiving from 50 to 60 cents per box.

One cranberry grower near Raymond, Washington, netted $889 from an acre and a quarter of worthless tidelands this season.

There are 200,000 acres of irrigable land on the Yakima Indian reservation in Washington, but as yet only 45,000 acres are under the ditch

Government officials having charge of the ranges near Klamath Falls, Oregon, have ruled that mangy or diseased stock cannot be pastured on reserve.

The reclamation of 100,000 acres of swamp land in Bonner County, Washington, has just begun. It will only cost about ten dollars an acre and will be an extremely valuable tract of land.

The bee season, according to the Southeastern Idaho Beekeepers Association, has been an extraordinarily good one. There will be about 300 tons of extracted honey for the market this year, the greater part of which will go to Ohio.

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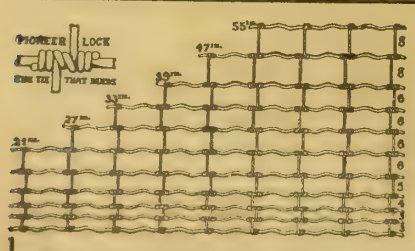

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Profit in the Poultry Yard

Practical poultry people who may have ideas from their experience as to methods of feeding and housing and general care of poultry will confer a favor upon the Cultivator and its circle of readers by sending in concise accounts. Mrs. Basley is always willing to answer queries, which with the experience of others should make this a most valuable feature in poultry life on the Coast. Opinions or matters of a personal nature should be omitted, but a concise statement of facts is always valuable.

POULTRY IN CALIFORNIA.

By Mrs. A. Basley.

Poultry ranches in California, when properly managed, pay well, quite as well as in the East. Formerly it was reported that fowls could not be profitably raised here and when I first came to California, a good many years ago, I learned that the roup was very prevalent and that most of the poultry and eggs had to be shipped here from the East. It was not long before I proved to my own satisfaction, being a practical poultry raiser, that this is an ideal climate for poultry of all kinds, and that it is also an ideal climate for lice and all vermin that prey upon poultry, and that the only difficulty in the way of making a profit in the poultry business is the insect pests of the poultry yard. Successfully fight these and all difficulties will vanish.

Ideal Climate.

The next discovery I made was that even in this ideal climate, if I sat in a draft, especially a small draft, that I got neuralgia, face ache or ear ache, or at any rate a cold. I had lived in the Middle West and there was accustomed to sit or even sleep in a draft and could scarcely realize that in this ideal climate there was a danger in it. I quickly discovered that a draft had the same effect on my hens, giving them ear ache, swelled head, catarrh, sore throat or roup as it was all called, and that if I protected them from drafts and kept them clear of vermin that this was indeed the ideal climate for poultry.

Not only is the climate favorable, ideal we may say, for chicken raising, it is also ideal for turkeys, ducks, geese, etc. There are many large ranches of all of these in California, while in Oregon, pheasant raising is proving most profitable.

Thanksgiving Bird.

Turkey ranches are greatly on the increase in California. This industry has been strongly advocated by the writer, and of recent years ranches numbering from fifteen hundred to three thousand turkeys, have proved successful and valuable. In fact, we anticipate before long supplying the "effete East" with the "Thanksgiving Bird."

There are a number of duck ranches in California but not so many as in the vicinity of New York. One, however, near San Francisco, I might mention, where one hundred and twelve thousand ducklings are annually sent to market. These are sold for eighty-five cents apiece, at the age of six weeks. Need I say that the owner of this ranch finds that the duck business pays?

Expense.

The cost of keeping poultry is higher in California than in the eastern states, but as the price of eggs and market poultry far exceeds the price paid in the East, this more than counterbalances the slight extra price of the food. I found that it averages me here ten cents per month per head. One poultry breeder, who has about three thousand hens, assures me that it costs him about seven cents a month. He buys the food in large quantities and gets it cheaper than the small rancher could do. The owners of other poultry plants put the cost of food per hen all the way from ten to twenty cents per month. One lady who recently came from Ohio said the food is dearer here, it is twenty cents a sack more than in Ohio, but the eggs here are twenty-two cents a dozen more than there, so one dozen eggs more than pays the difference on a whole sack of wheat.

Pests.

The difficulties to contend with are as I have said, the insect pests and the drafts. Of course, pure water and shade as well as sunshine must be accessible at all times. Green food is also in some places one of the difficulties. This of course must be supplied.

The climate is most favorable for chicken culture as proved at the poultry shows. The fowls raised in California winning the blue in hotly contested competition with the eastern fowls.

In Our Favor.

There are not so many failures now that people understand the climate and have learned either by instruction through the University poultry courses or the University institutes or their own experience how to handle fowls. These are much more easily raised than in the East, for we have not the terrible winters to contend with and the cause of failure lies with the individual owner and not with the climate and certainly not with the good little hen, for she will always do her duty.

It's Up to You.

If you are a successful business man in almost any business you will most probably succeed; if you are a failure in any business you will prove equally unlucky in the chicken business. The chicken business is made up of little things and can easily be ruined by little things (vide the lice). The man or woman who attends to the little details, watches for the little cracks that make little drafts, fights the little pests, takes the right care of the little chicks, is the one that succeeds. A woman that is a good housekeeper usually makes a good hen mother. Whether you would succeed in the poultry business rests with yourself.

THE CURSE OF SPARROWS.

By J. H. Davis.

The mistaken but well-meaning person who introduced sparrows into this country without any knowledge of their destructive and expensive tendencies, may have done so, and perhaps did so, by taking the word of others that these rapacious birds would prove a blessing as insect destroyers. Nothing so bad ever happened to this country as the introduction of the English sparrows, unless it be war and pestilence.

These birds cost the people of the United States millions of dollars every year in seeds and grain destroyed and eaten. And no people have suffered more than poultrymen. It costs a lot of money to feed thousands of birds. In my experience I've had to stand in my yards and keep watch over the fowls until they were through with the grain feed, as the sparrows swooped down in large droves and in a little while would clean up the grain, leaving the chickens to go hungry. The block where I am now living contains three houses, my own and those of two neighbors. We all keep fowls. And it is safe to say that no less than five hundred sparrows flock down into the chicken yards at every feeding time, when the yards are not watched. They seem to know when feeding time comes, and are always on hand at the hour. In order to test the thing, a few days ago I gave my fowls an extra large feed of wheat, cracked corn and oats, and then went into the house and took up a position near a window where I could watch the sparrows. I had no more than got into the house than an immense flock of the birds visited the chicken yards and would actually

fight with the fowls for feed. In ten minutes the sparrows began to fly away, and going out I found that every grain I had thrown on the ground had disappeared.

And that sort of work is expensive, and unless the fowls are fed inside of a closely screened enclosure they get the feed every time. Wire netting they will go through unless it be the finest. I tried feeding my fowls in the poultry house, but, having a large window or opening covered with two-inch wire mesh, the sparrows went right through and into the house. And they even go in at the small entrance and exit for the fowls, as I keep the house closed all the time, with wire mesh at the open front. I now see that I must replace the two-inch mesh with inch-mesh, which is some expense.

Not only are the sparrows destructive of grain and all kinds of seeds, but they have nearly depopulated parts of the United States of song birds, for they destroy every nest of song birds they can find. Lettuce seeds, sunflower seeds and all other kinds of seeds are destroyed by these rapacious rascals. At one time I lost half an acre of Kaffir corn which I had planted for my fowls. I did not get a single grain. The same year they also destroyed all my lettuce seed, sunflowers and so on. Shooting at them did no good. Then I made scarecrows, imitation men with hats on. But this did not scare them, as they would come into the Kaffir corn patch and light on the scarecrows. So at last I gave up. I tried poisoning them, but they would not take the bait.

In some states bounties are given by the different counties and by the state for sparrow heads. And it must come to this in California. When I first came to California there were no sparrows that I saw. Yet now there are millions, and they are more than doubling every year, and getting to be worse than the rabbits in Australia. Something must be done, and done at once. Towns and communities should offer a premium on sparrows, and they should be destroyed by every possible means. Poison—grain soaked in poison and put where fowls could not get it—might be effective. And they might be netted as quails and pigeons were netted. If there were a bounty attached to their killing, there are plenty of boys and men who would like the sport.

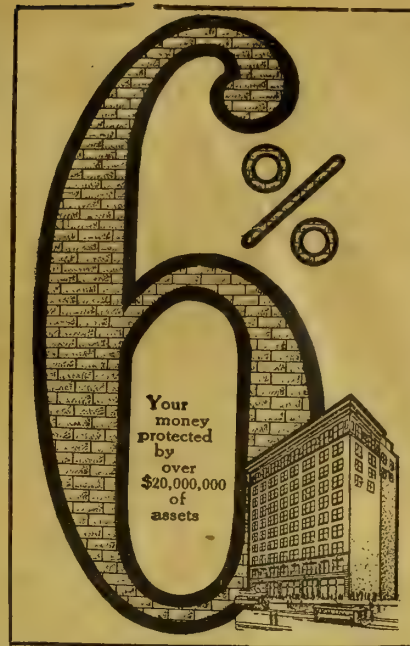
And when the next California legislature meets there should be something done by the legislature looking to the destruction of these miserable pests. There should be days set apart for sparrow killing, and then everybody should help in the killing or be made to contribute something toward the killing.

I know that in Fresno County the sparrows and the blackbirds did untold damage. At a ranch on the Kings River, where I was visiting for a few weeks, I was told that the sparrows and blackbirds and some other birds had destroyed immense quantities of gyp corn and other grain. One field of millet was entirely taken by the birds. One rancher told me that the birds had destroyed a field of gyp corn for him two years in succession, and that he was afraid to try it again. And all over the grant lands the birds had committed great havoc.

On this bird question people seem to be asleep, apathetic. But on the question of rats, which are not half as bad as the birds, a war has been waged and hundreds of thousands of dollars spent in trying to exterminate the rats, which are supposed to breed fleas and the plague.

This is a really serious matter, and deserves serious thought. That our song birds should be destroyed by the sparrows, and that millions of dollars worth of grain and seeds should also be destroyed in this manner, is no trifling matter. We are quick to fight other plagues and diseases, and why not fight the sparrow plague?

Every agricultural journal, every poultry journal, every weekly paper in the state, should agitate this sparrow question. It is a grievous burden on the people. It is costing the poultrymen of California thousands of dollars annually. And if they are not destroyed and driven out, California will not long hence have no song birds, just like some other states in the East where the sparrows have about exterminated them.—Petaluma Poultry Journal.



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30,000 feet	3½-inch	Casing, at	16c per foot
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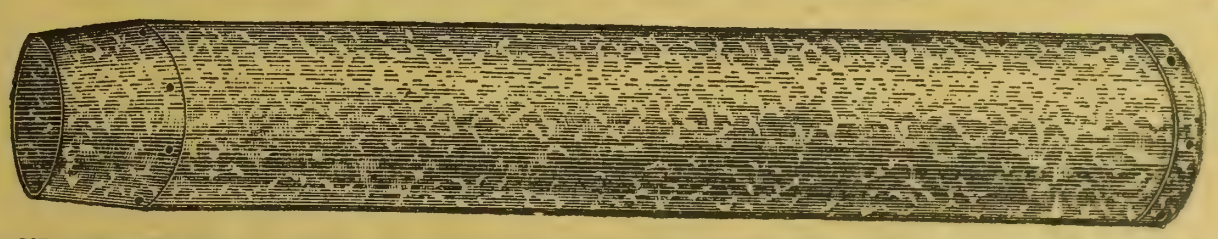

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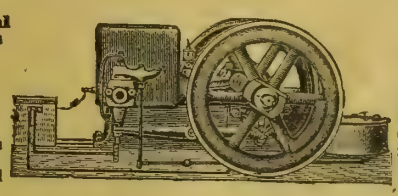

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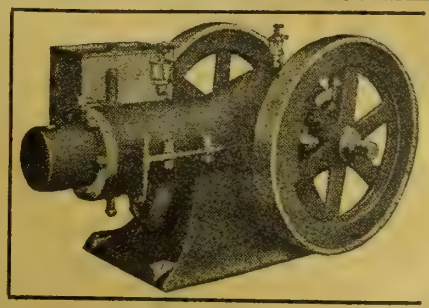

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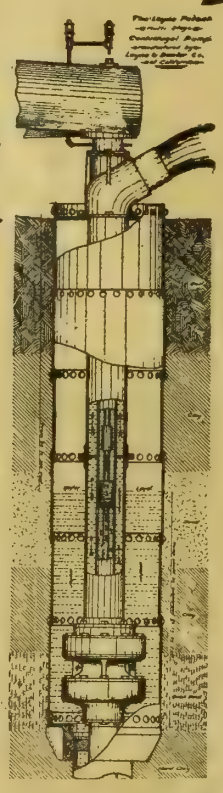

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Questions and Answers

THE EDITOR AND STAFF

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Experiment Station Bulletins.

Where can I get Bulletin No. 214 written by Professor Quayle?—Subscriber, Lakeside.

Write State Agricultural Experiment Station, Berkeley, Cal.

Drying Prunes.

In an answer to a query on Sept. 7th the Cultivator erred in stating the proportion of water and lye to be one pound of lye to ten gallons of water. This should have been twenty gallons. A subscriber near Healdsburg writes that in that section they use as weak a solution as 1-50. For such a weak solution as that we should imagine the prunes would have to be especially green.

Cream of Tartar.

Can you inform me as to the process of making cream of tartar? Is there any demand for the crude crystals formed in grape juice?—Subscriber, Los Angeles.

We believe our inquirer must be mistaken as to formation of crystals of cream of tartar in grape juice, unless he means during fermentation. These crystals are not formed excepting from fermentation. The cream of tartar crystals are the result of the sugar in the grape juice being destroyed during alcoholic fermentation. These crystals are soluble in the sugar solution but insoluble in alcohol, hence their formation. In the manufacture of wine these crystals are formed on the sides of the casks and containers. They are gathered and shipped to this country in great quantities, sometimes importations reaching thirty million pounds. The amount produced in the United States is very small. As the labor in Europe is so much cheaper the importation places them on the market lower than they can be collected. We do not know of any place where these crystals can be disposed of, but assume that the larger eastern chemical houses would be the only place. We think there is no place in this state where they can be disposed of.

Rheumatism.

I have a turkey that picks her feet. They are swollen and sometimes so sore she can hardly walk. I have looked but cannot find anything in them. I have tried coal oil and axle grease and salve; also I tried wrapping them up, but nothing seems to do any good.—Mrs. M. J. M.

From the symptoms you give I think that your turkey has rheumatism or else "scabies." In any case mix the following and bathe the feet twice a day, but do not wrap them up with this lotion. Mix one cup of vinegar with one cup of turpentine, add saltpeter all it will take up (about two heaping tablespoons). Keep the mixture in a bottle and shake before using. This lotion will take the pain and inflammation out of the foot. Give the turkey Epsom salts in the drinking water. A teaspoon to a quart of water. Or better still, 15 grains of iodide of potassium to every quart of water. Or even bicarbonate of soda a teaspoon to every quart of water. Also give plenty of green food such as lettuce and cabbage.—Mrs. A. B.

Fertilization for Onions.

What kind of fertilizer should I use in the production of onions on a light gravelly soil? — Subscriber, Santa Maria.

If it is intended to attempt the growing of onions for market on such soil, I do not think any amount of fertilizer will make it a profitable venture. Onions require a rich, fine, loamy soil containing a large amount of humus, in order to secure a crop that will pay. And if the light gravelly soil has been raising hay it will be still more unfitted for onions. However, if inquirer wishes to risk it, any high grade fertilizer with a large percentage of potash would be the best. And better results will be had from growing the onions in a seedbed and transplanting into open field when they get of proper size than by sowing the seed at once in the open field. The latter method often produces half the crop thick necks and half of inferior quality.—Q. A. L.

"Buy the Best Milk Producer in the world, sugar beet pulp at 50 cents per ton, of Los Alamitos Sugar factory."

Curing Olives.

Please give formula for putting up olives.—Subscriber, Santa Ana.

We take it the subscriber wishes information as to pickling olives. Full instructions for the handling of olives is given in the issue of Sept. 15, 1910. It was written by Mrs. Sherman and is considered one of the very best formulae ever given.

Planting Lawn.

What is the best month in the year for planting a lawn?—Subscriber, Glendora.

See answer to similar question in last week's Cultivator.

Red Spider.

I enclose branch of almond tree infested with insects. What are they, and what is the remedy Another tree adjoining does not seem to be infested.—Subscriber. Orange.

There is no insect which we can find on the leaves which have been sent, but there are marks of the work of the red spider. We presume that is the cause of our subscriber's trouble. The treatment is given in the Cultivator of Nov. 3, 1910.

Shire Registration Book.

What is the address of the Shire Registration Association of America? —Subscriber, Napa.

Charles Burgess is secretary. His addres is Wenona, Ill.

Chicken Pox.

A disease has broken out in our flock of chicks. Sores break out on the heads of chicks. in some cases covering the eyes. then the chick goes blind and soon dies. Where not so badly affected, some get well. The eruption looks like a black wart, and if the chick gets well, where the scab was it leaves a pit like a smallpox pit. We think it is chicken pox. Can you give a remedy? None of the grown fowls are affected.—Rancher.

The disease is chicken pox. The cure is to grease the little warts with carbolic salve and add a little sulphur to the feed. Chicken pox is a germ disease and is very prevalent in the fall in California. It is much worse in the East. It is not fatal with the adult fowls, although it retards laying, but is fatal with little chicks, and even with those half grown. The only thing you can do is to grease the spots as soon as they appear with carbolic salve or carbolated vaseline, or you can make a good salve by mixing in one tablespoonful of lard four drops of the crystallized carbolic acid. The carbolic acid kills the germ. Some advise using bluestone (sulphate of copper), washing the sores with warm suds to soften the scabs, and afterwards bathing the spots with a solution of sulphate of copper one-half a dram (one-half a teaspoonful) in a pint of water. I have found the carbolic salve quite satisfactory. It should be carefully applied and only to the spots, as it is a poison, and if smeared over the chieck poison, and if smeared over the chick en pox is very contagious. The houses and coops should be thoroughly disinfected by spraying with a two per cent solution of carbolic acid or whitewashing freely with carbolic acid added. Segregate the affected chicks and examine for lice and mites, as these pests carry the infection to others.—Mrs. A. B.

Irrigation and Forestry

REQUIREMENTS OF SETTLERS ON RECLAMATION LANDS.

Complaints have been received from settlers on Reclamation projects that by reason of the misrepresentations of land agents they have been induced to purchase lands which were afterwards found to be without any rights to water from the Government canals. The Secretary of the Interior today issued the following warning which, while it refers particularly to the Rio Grande Project in New Mexico and Texas, is equally applicable to other projects containing large areas of private lands:

"All persons are warned against accepting any statements concerning this project, without inquiry from the officers of the Reclamation Service. Experience has shown that some warning of this kind is necessary because misleading statements have been issued regarding the project and the conditions existing upon it. The project has many advantages and would not have been taken up and pushed unless it was considered feasible and worthy of development. These facts, however, do not warrant certain exaggerated statements which have been made.

"In particular, attention is directed to the requirements of the Reclamation Act regarding residence and cultivation. The act prescribes that no right to the use of water for land in private ownership shall be sold for a tract exceeding 160 acres to any one landowner, and that no such sale shall be made to any landowner unless he be an actual bona fide resident on such land or occupant thereof, residing in the neighborhood of said land.

"It is also required that the landowner shall reclaim at least one-half of the total irrigable area of his land for agricultural purposes before any right to the use of water shall permanently attach. Ignorance of these and similar requirements has resulted in great embarrassment to purchasers.

"It is not known how many years will be required for the construction of the storage dam, nor is it safe to make predictions as to when water will be available in view of the many uncertainties existing.

"Warning is also given that the amount of available water power has been grossly exaggerated in many current discussions. It is not definitely known that there will be any power available for sale, and there is no assurance that it will produce dividends reducing the cost of water rights.

"Purchasers are warned against being misled by the statement that certain tracts are 'signed up' under the government irrigation project. This 'signing up' is the landowner's subscription to the water users' association. It designates tracts of land and subjects to liability for water charges so much thereof as shall hereafter be furnished with water from the government works, but it does not in any way bind the government to furnish water to any particular tract. On the contrary, considerable areas have been thus designated in subscriptions to which, because of location, elevation, physical conditions, or other reasons, water can never be furnished. Prospective purchasers should not rely upon the statement that land is 'signed up,' but should carefully investigate and satisfy themselves that the tracts offered to them are in fact likely to be furnished with water under the project.

"While it is not possible to give definite assurance on many of these points, the persons interested are advised to read carefully the terms of the Reclamation Act or consult the publications such as "Questions and Answers" which have been prepared to explain some of the requirements of the law."

CONTROL OF RESERVES.

The decisions handed down by the Supreme Court on May 1, concerning the right of the government to control grazing on the national forests are of great interest to western people, and especially to the western stockmen. The right of the government to control its own lands within the various states and territories is so clearly defined that it is regarded by Secretary Wilson as establishing absolutely the position these lands occupy under the law. "I am very sure," said Secretary Wilson today, "that the stockmen of the West, as well as the western people generally, will accept this decision of the Supreme Court at its full worth and that the controversy which has heretofore existed regarding the right to use the grazing lands within the various national forests without permit from the Department of Agriculture will be brought to an end.

"The two cases decided were the so-called Light case, which originated in Colorado, and the case of the United States against Grimaud, Carajous and Inda, three California stockmen. In the Light case one of the principal issues joined was on the question whether the fence law of the state must be complied with in order that the United States might sustain action for trespass on the national forests. The California case concerned the question whether violation of the national forest regulations is punishable as a crime.

"Light is a Colorado stockman who, in 1906, turned his cattle loose on public land adjacent to the Holy Cross National Forest in such a way that they would naturally drift upon national forest lands. Mr. Light refused to take any steps to prevent this and also refused to take out a grazing permit. It was maintained by Light's lawyers that, inasmuch as the laws of Colorado do not allow a private person any remedy against owners of stock which stray upon his land unless the land is fenced, the government is without redress. An injunction was secured from the eastern court requiring Mr. Light so to handle his stock as to prevent them from trespassing upon the national forest. Mr. Light, however, refused to do this and, with the backing of other stockmen of his state and, eventually, of the state of Colorado itself, which made a special appropriation for the purpose, carried the case up to the Supreme Court for final decision.

"In the effort to establish the contention that the government was wrong, not only the validity of the grazing regulations but the constitutionality of the entire national forest policy was challenged on every ground which the counsel representing the stock interests and the state were able to raise. The fact that their contentions were, one after the other, set aside by clear-cut statements of the law is a matter of extreme satisfaction to me. I nevertheless believe that the stockmen who have so vigorously contested the government's position will feel that they have been fairly dealt with both by the department and the courts.

"In the second case, known as the Grimaud case, the contention of the stockmen was that the act of congress, under which the Secretary of Agriculture is authorized to make regulations for the national forests, was unconstitutional in so far as it delegated to the Secretary of Agriculture the power to make rules and regulations and made a violation thereof a penal offense. The unanimous decision of the case is exceptionally clear-cut and final. The power of congress to authorize the Secretary to establish such regulations for the administration of these forests is absolute, the court holding that congress had the full power to authorize the Secretary to make these regulations and enforce them. The punishment was fixed by congress and the Secretary's regulations merely provided the methods of enforcing the law and, in the event of its violation, of applying the penalty fixed by the law. As the court in its decision says, the Secretary is authorized 'to regulate the occupancy and use and to preserve the forests from destruction.' A violation of reasonable rules regulating the use and occupancy of the property is made a crime, not by the Secretary, but by congress. The statute, not the Secretary, fixes the penalty."

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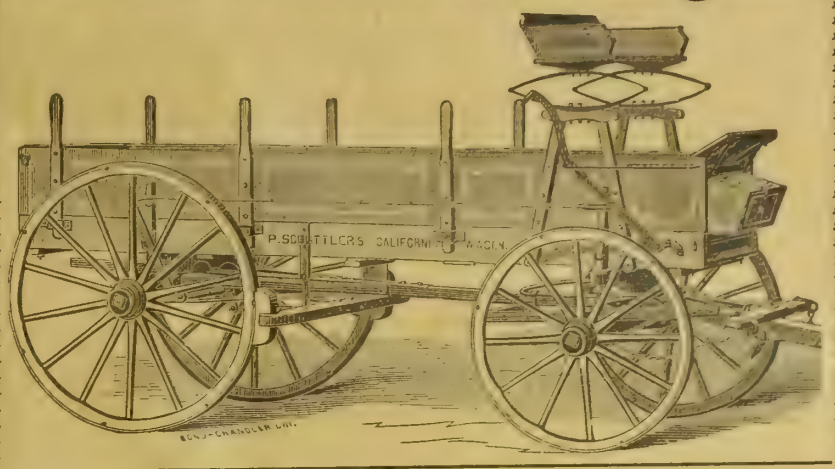

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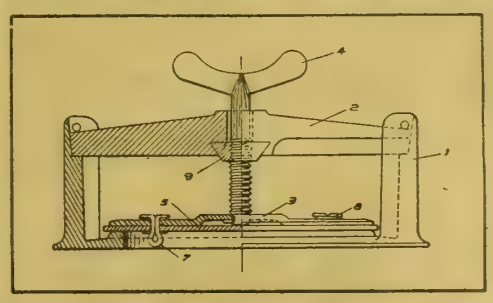

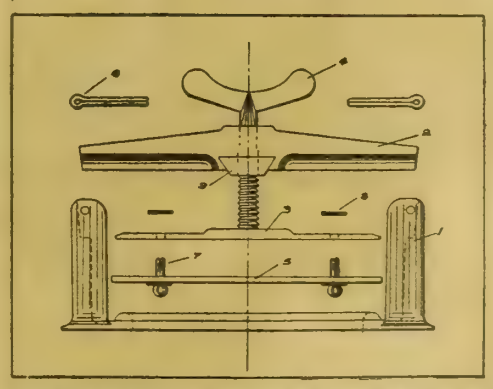

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Brighton Herd of Berkshires won the following prizes at Fair 1911: Silver cup for best herd of Berkshires, silver for reserve champion sow, first and third for sow under one year and third on boar under six months. Registered stock for sale. H. L. Murphy, Perkins, Sacramento Co., Cal.

Stallions for Sale—Acclimated animals. All harness broken, sound and gentle. Leader 40637. Dapple gray, 8 yrs. old. Ladoga Leon, 66619, 2 years old. Dark gray. Dam weighs a ton. Liberty 74310. Black yearling. These three are registered in the Percheron Society of America. Atwood, bay carriage stallion, 2 years old. Solid color. Sired by Athadon, 1st dam by Junio, son of Electioneer. McKinney Don, 2 yrs. old. Solid bay with black points. Sire Stanford McKinney. 1st dam Belladonna, standard by trotting record. 2nd dam by Athaneer. Both well broken to buggy. Minnewawa Stock Farm, Fresno, Cal.

Percheron Stallion For Sale—A registered, two-year-old, black Percheron, sound and gentle, weighs now 1650. Will deliver him at your town for $1000. He will pay for himself first season. Address Chas. F. Thompson, R. F. D. 3, Bakersfield, Cal.

Rufus Red Belgians, White Angoras, New Zealand Reds and Silver Grey Flemish Giant Rabbits. Catalog free. Caldwell Bros., Los Angeles, Cal.

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For Sale—Pure bred New Zealand and Belgian rabbits for breeding purposes. Large stock continually on hand. Prices reasonable. We solicit your correspondence. Mattjetscheck & Crane, Banning, Cal.

Beautiful White Saanen Toggenburg Buck by Andreas Hofer, three months, looks like six. Pedigree, record stock. Price $25, or trade for doe. B. Stocker, San Luis Obispo, Cal.

Three Holstein Friesian Bulls, splendid young animals, for sale. Well marked and subject to registry. Write at once to Geo. C. Roeding, Fresno, Cal.

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Local Representative Wanted—Splendid income assured right man to act as our representative after learning our business thoroughly by mail. Former experience unnecessary. All we require is honesty, ability, ambition and willingness to learn a lucrative business. No soliciting or traveling. This is an exceptional opportunity for a man in your section to get into a big paying business without capital and become independent for life. Write at once for full particulars. Address E. R. Marden, Pres. The National Co-Operative Real Estate Company, L 448, Marden Building, Washington, D. C.

Wanted—Reliable man who understands citrus nursery work. Address Box 403, Santa Paula, Cal.

Wanted—About 200 good White Leghorn pullets. State age and price. L. W. Holtzclaw, Lakeside, Cal.

Wanted—By young man, position as manager or foreman on fruit ranch. References. Address Box 61, R. F. D., Aptos, Cal.

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Planters invited to inspect our strictly high grade citrus trees. Robinson Citrus Nurseries, San Dimas, Cal. P. O. P. E. Ry. to Valley Center, four blocks north.

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For First Class Valencia and Navel Orange Trees and Eureka Lemons, see A. G. Snow, Oxnard, Cal.

Low Prices on advance orders of deciduous fruit trees. Ballou's Nursery, Pasadena, Cal.

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DAIRY RANCH
FOR SALE.

430-acre river ranch of deep heavy loam, with good improvements, including fully equipped dairy; 110 acres of fine alfalfa, producing from four to five heavy crops; 60 acres of fertile upland, suitable for fruits, berries and alfalfa; 130 acres fine timber and feed land; 130 acres cleared bottom land, raising large crops of grain, all suitable for alfalfa or fruits.

This property is all well fenced and lies within 1½ miles of railroad station with ten passenger trains arriving daily. For price and terms apply to G. E. Brinkerhoff, owner, Modesto, Cal.

Lindsay District Orange Lands cost less money; produce more than any similar lands in the state. No scale, smut or diseases common to other sections. Crop marketed before the holidays, avoiding all dangers from frost. Ten acre tracts close to Lindsay, $150 per acre. Choice alfalfa lands, abundance of water, $50 and up. For information, call or write, Kious-Whann Realty Co., 235 Mason Bldg., Los Angeles, Cal.

For Sale—A 20-acre farm for $20 cash and $20 a month; possession now; $90 to $125 per acre; your crops pay for the land; rich, level land for alfalfa, oranges, almonds, grapes, cows, chickens; abundance of ditch water for irrigation for $1 an acre a year. Where else can you get this? In Oakdale Colony, near good town and railroad station. Climate delightful. T. Wiesendanger, 207 S. Broadway, Los Angeles, Cal.

For Sale— $20 Per Acre.

350 acres A-1 citrus, grain or stock ranch, 7½ miles south of Escondido, in line of new electric road now building, half mile from boulevard. Five-room house, barn, sheds, etc. Two orchards. Two good wells, two springs. About 225 acres under cultivation, about 75 more can be plowed, balance pasture. This is a bargain. Address Conrad & Company, Escondido, Cal.

For Sale—160 acres near Holtville, Imperial County, Cal. All in alfalfa, and sufficient water to cover 160 four feet deep. Well improved and in fine condition. One of the very best farms in Imperial Valley. Will sell dirt cheap. One-half cash. Long time on balance. Address, A. H. Rehkopf, 3112 Halidale Ave., Los Angeles, Cal.

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San Diego County! My splendid weekly newspaper will tell you about this great county and superior climate. 16 weeks for 15c. H. P. Rising, publisher, Escondido, Cal.

For Sale—160 acres Imperial ranch; best soil and bargain in valley; $6,000. Corcoran and San Diego property. Jackson, 504 Higgins Bldg., Los Angeles, Cal.

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For Sale—Second hand windmills, tanks, pumps, engines, farm machinery.
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8 ft. Aermotor mill, tower, R. W. tank, 18 ft. tank stand, galvanized pipe, pump complete, $48 or $56 f. o. b. Fine stock 10 and 12 ft. steel mills with or without tanks at about half price.

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Walnut Growers, Attention—I have a Meier No. 2 walnut huller for sale, but little used. I had to dig up my trees is reason for selling. It is a money saver, does good work. Less than half price, $30 f. o. b. San Diego. Address, N. P. Eisenmayer, Nestor, Cal.

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Ahuacate Seeds, Avocado, Alligator Pear, Persea gratissima. Price reduced to $3.75 per 100 and $33 per 1000. Germination guaranteed if our directions are followed. Montarioso Nursery, Box 1500, Santa Barbara, Cal.

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How to Make Money—Mrs. A. Basley's Latest Poultry Book is without exception the most wonderfully complete manual on the subject of successful poultry management ever written. The secret of how to raise every turkey hatched and the "Basley Formulas," now published for the first time, are worth many times the price of the book. The "Western Poultry Book" is a practical book by a practical woman. Price $1. Address Mrs. A. Basley, Box 77, Venice, Cal.

The Goodacre Strains—Our Red chicks are hatching strong, only $12 per 100. Do you want Ancona chicks at $15 per 100 or 18c each? How about yearling males at $3 for Leghorns and Anconas; $5 to $7 for R. I. Reds and Buff Orpingtons? Eighteen Leghorn hens and cock for $20; R. I. Red young cock and four hens, $12; Buff Orpington young cock and four hens, $14. Write for our summer price list. Goodacre Bros., Compton, Cal.

Standard Poultry Yards—Are booking orders for eggs from the best Cook or Kellerstrass White Orpington chickens on earth, from $2.50 to $5.00 per setting and from $15.00 to $30.00 per hundred. Baby chicks 50c each. Six-weeks-old chicks $1.00 each. E. C. Worden & Son, 4004 University Blvd., San Diego, Cal.

For Sale—Pullets, cockerels and yearling White Orpingtons (Cook strain), Black Minorcas (Northrup strain), White Minorcas, R. I. Reds (Tompkins strain), pure bred. C. U. Chamberlin, Los Gatos, Cal.

Day-Old Chicks, Barred Rock and White Leghorns, good laying strain. Order now to insure early fall delivery. The Fairmount Hatchery, 29 B Rural No. 1, Santa Cruz, Cal.

Poultry Wanted—We pay the highest market price for all the local poultry we can get, no matetr how large the quantity; also fresh ranch eggs. We remit immediately. Allaway & Layton Co., 607 E. Third St., Los Angeles, Cal.

Orpingtons—High class Buff and White. Bred to lay from prize winning stock. 500 pullets and cockerels for sale. Reasonable prices. Will mate pens with unrelated males. Write Mrs. S. Swaysgood, Route 1, Healdsburg, Cal.

Just Hatched White Leghorn Chicks every month, from select, heavy laying, mature stoek. No pullet eggs used. Lodi Hatchery, E. Elm St., Lodi, Cal.

White Leghorns—Buff Orpingtons. Bred for beauty and great egg production. Grand lot of both old and young stock for sale. Prices reasonable. Write your wants. Model Poultry Farm, Box H, Irvington, Cal.

Hicks Jubilee Hatchery, now booking orders. Write us your wants. We use eggs from first-class stock only. Try us. W. J. Hicks, Petaluma, Cal.

For Sale—Now is the time to place your order for baby chicks, all breeds, 20,000 capacity. Can fill order, large or small. Carl Matson, Inglewood, Cal.

Western Hatchery—We are booking orders for day old chicks hatched from well selected, well bred stock. Write for prices and terms. Western Hatchery, Western Ave., Petaluma, Cal.

For Sale—Barred Rock Cockerels about six months old, also day old chicks hatched to order. Enoch Crews, R. No. 1, Santa Cruz, Cal.

The Luedkes—Incomparable R. I. Red high record layers. Eggs by the hundred $6.00. Fancy matings $3.00 for 15. P. O., Anaheim, Route 1.

S. C. Rhode Island Reds—Fine big pullets for sale at $1 each. L. Hayes, Madera, Cal.

Rose Comb Black Minorcas, nine years line bred. Stock and eggs in season. Eleanore Minorca Farm, R. D. 1, Los Angeles, Cal.

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Four Fine W. Orpington Cockerels of high priced stock, $2 each. Need room. H. C. Schmidt, 435 Twenty-first St., San Diego, Cal.

TURKEYS

For Sale—Beautiful thoroughbred Bronze Turkeys for breeding purposes. Get off car at Mayflower. Mrs. J. R. Cutting, 301 Violet Ave., Monrovia, Cal.

GEESE

For Sale—Fine Toulouse geese for breeders. D. S. Willey, Damask Ave., N. Inglewood, Cal., R. D. R. No. 1.

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We have a few genuine "Rankin" strain Mammoth Pekin drakes to spare that will add a pound each to your next lot of ducks. Grand big fellows, fit to show. Price two to five dollars each. Eggs from our best pens, $10 per hundred, $2 setting. Long Beach Poultry Ranch, Long Beach, Cal.

Indian Runner duck eggs from stock carefully bred for heavy layers. Price $1.50 per dozen. Drakes for sale. Mrs. Fred Chester, Santa Rosa, Cal., Route 2.

For Sale—Indian Runner Ducks, $1.25 each. N. S. White Leghorn Cockerels, 6 mo., $1 each. Also hens. A. M. Porter, Angiola, Tulare Co., Cal. P. O. Box 24.

Indian Runner Ducks—Pure fawn and white. Great egg producers. Limited number for immediate delivery. $5 per trio. E. R. Fulkerson, Claremont Farm, Galt, Cal.

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Pasture to Rent—3,000 acres. Good stubble and wild feed. See R. Phillips, P. O. Gaviota, Cal.

Farm to Let—Two orange groves, 10 and 15 acres, two or three years to right party. Converse, Glendora, Cal.

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Special Incubator Offer—We are overstocked on 130-egg size Success Incubators. We offer 50 of them at $10 each as long as they last; regular price $14. Order now. E. E. McClanahan Incubator Co., 112 East 8th St., Los Angeles, Cal.

MISCELLANEOUS

60 H. P. 4-CYLINDER AUTOMOBILE. Engines guaranteed mechanically perfect. Wheel base 120", tires 4½x36". Was bought in spring of 1909; cost $4,000. Has first paint and good tires, good transmission, gears first class. This is a roadster, made for heavy roads. Would make fine desert car or truck. Was taken in real estate deal. Positively no use for it. Will take $675. $375 must be cash, and for balance of $300 would take payments, or trade for hay, horses or farm machinery. What have you? On account of trip to Europe, I am leaving this car with Demmitt Windmill Co., Los Angeles, Cal., who will close any deal in my behalf.

Free—"Investing for Profit" Magazine. Send me your name and I will mail you this magazine absolutely free. Before you invest a dollar anywhere, get this magazine—it is worth $10 a copy to any man who intends to invest $5 or more per month. Tells how $1,000 can grow to $22,000; how to judge different classes of investments; the real power of your money. This magazine for six months free if you write today. H. L. Barber, Publisher, R. 430, 28 W. Jackson Boulevard, Chicago, Ill.

The Bell Agency. A general public service bureau, 833 Market St., San Francisco. Attends ot anything for anybody. Bank references. E. D. Dement, Mgr.

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Sunset Investment Co., 418 Union Trust Bldg., Los Angeles. Phone Home F 2310.

SEEDS AND PLANTS

Wanted—10,000 Citrus Trifoliata stock for budding. Please state age, size and price. Montarioso Nursery, Box 1500, Santa Barbara, Cal.

WELL MADE.

The writer on a recent visit to Fresno visited the shops of The Fresno Implement Company, partly, it must be confessed, in search of advertising "copy," but more to see their new spring bolster wagon in course of construction. There is nothing particularly different about this wagon as compared with other gears, except that the bolsters, instead of being made rigid as has always been done in the past, are built up of leaves of 3x 5-16-inch spring steel. The rest of the gear is standard, it having the regular height of wheel, width of track, and distance between bolster standards. The advantages of this spring bolster construction, which they tell us is fully covered by patents, are easily apparent to any one. The writer was especially struck, however, by the guarantee under which this wagon is sold—it being, without question, the broadest guarantee that has ever been offered. For example, they guarantee the tires against coming loose for three years. They also agree that if the axle is bent or broken under any load, on any road, at any time, they will, on return of bent or broken part, furnish a new one without charge. They also guarantee the gear against defective workmanship.

After going through their shop, however, and noting the way in which every piece that enters into this wagon is tested and inspected, it is very easy to see how they can back up their wagon in this way.

We have no doubt but that this gear will prove to be a winner, and we advise such of our readers as expect to purchase a wagon in the near future to write to them for an illustrated booklet, which fully describes the construction of this gear.

PLANTING TREES WITH DYNAMITE.

Tree planting with dynamite is the title of a book issued by the DuPont Powder Company, and gives much that is new and valuable in the fitting of ground for planting of orchard trees. The book states that it has been conclusively proven that dynamite is an exceedingly valuable addition in the successful growing of trees, and that those who have tried it are convinced that no method of excavation is so economical, quick or productive of desirable after results as blasting with dynamite. Many illustrations are given in the book showing conditions of trees planted in dynamited holes, and of others with much less thrifty growth planted in holes as ordinarily excavated. Instructions regarding the handling of dynamite and many letters of recommendation are given in the Book. We doubt not it may be had for the asking by writing the E. I. du Pont Powder Company, Wilmington, Del.

FALL CATALOGUE.

The Morris & Snow Seed Co. of 425 S. Main street, Los Angeles, is sending out its 1911 bulb and tuberous rooted plant catalogue. It contains cultural directions for bulb planting in California and a long descriptive list of the various bulbs. The catalogue is not large; in fact, just about right for the pocket, but full of valuable information.

She (complainingly)—"You promised faithfully that you wouldn't smoke any more after January 1."

He—"I'm not. I am simply keeping up the usual amount."

Milk Coolers, all sizes and prices. Guy F. Kelsey & Co., 106 East Eighth St., Los Angeles, Cal.

Veterinary

Answers in this column by Fred G. Matthews, M. S., D. V. M., 1232 Central Ave., Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Throat Trouble—Tuberculin Test.

About six weeks ago my cow lost her voice and began to cough. She has lost some flesh, but her appetite is good and the flow of milk continues about the same as before the trouble began. There is broncho grass in the pastures. Would the beard from grass lodging in the throat or windpipe cause the trouble? What are the symptoms of tuberculosis and where may tuberculin for testing the cow, be procured?—Subscriber, Plymouth.

Beards from hay and grasses often lodge in the throats of horses and cows and may result in more or less injury to the vocal organs. The symptoms of tubereulosis vary greatly according to the location and extent of the diseased areas. The internal organs may be extensively involved without marked external evidences. When located in the udder it asumes the form of chronic garget; when some bone is affected there is obscure lameness; when confined to the lungs and throat there is modified breathing and coughing, etc. Your druggist can secure tuberculin from The Cutter Laboratory, Berkeley.

Instructions for applying the test will be furnished with the tuberculin if requested. Temperature may be taken—per rectum—with a clinical thermometer for human uses. Select a thermometer with a blunt and rounded mercury end to avoid the danger of pricking the parts while it is being inserted. If the services of a qualified veterinarian are not available get your physician to aid you in making the test.

NOVEL DEMONSTRATION.

A spraying-outfit-chug-chug-wagon combination may give the impression that the world is moving still faster. We have no record of any installed on either monoplanes or biplanes, but the illustration given here shows the chug wagon combination all right.

Swell Spraying Outfit Which Will Visit Orchards.

This is in fact the demonstrating outfit of the Bean Spray Pump Company of San Jose. This magnificent machine is installed on the automobile and is now touring California. This coming week it will be in Los Angeles and other portions of Southern California. Everyone interested in the most up to date spraying appliances should get in touch with the manager of this outfit, and he will visit any portion of Southern California within reasonable reach of Los Angeles and show up the merits of the machine. Mr. Crummey, the manager, tells us this auto wagon, which weighs 6,400 pounds, has one of the complete Bean Giant Sprayers, a complete Pony Power Sprayer, excepting that the tanks are very small. Hand pumps are also a factor with the outfit. Wherever this demonstrating outfit has appeared most intense interest has been manifested. Santa Barbara and Santa Paula sections observed its workings. Orchardists in any section should write at once to Mr. Floyd Hanson, care of Cultivator Publishing Company, 115½ North Broadway, or we doubt not Mr. Hanson can be seen at the Hollenbeck Hotel. Send in the requests for the demonstration.

Anthrax Cure, Milk Fever Outfits. See G. J. Weber Co., 225-227-229-231 East Sixth Street, Los Angeles.

FOURTH TIME SEA TO SEA.

Not content with having successfully completed a record breaking motorcycle trip across the continent from San Francisco to New York, Volney E. Davis is now motorcycling back to San Francisco.

This is not his first, but his fourth, transcontinental tour, and Davis is the only motorcycle rider with a round trip from San Francisco to New York to his credit. He rode the 3,746 miles from the western to the eastern coast in twenty days, nine hours and one minute. He has now passed Toledo on his way back—and "going some."

Legal

Edw. L. Payne, attorney, 301-304 Douglas Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Payne is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

A Nuisance.

A neighbor maintains a bull in unmolested view in corral immediately opposite residence. Is there any way this may be prevented?—Subscriber.

The civil code declares that anything which is indecent or offensive to the senses, so as to interfere with the comfortable enjoyment of life or property, is a nuisance. The penal code uses the same language. The thing complained of seems to be a private as well as a public nuisance, therefore the inquirer might proceed to bring an action to have the nuisance abated under the provisions of the civil code, or he might bring the matter to the attention of the district attorney and request him to proceed under the provisions in the penal code. No doubt a judge or jury entertaining the ordinary American ideas of decency would consider the complaint well made.—E. L. P.

HOMESTEAD AREAS OPEN TO ENTRY.

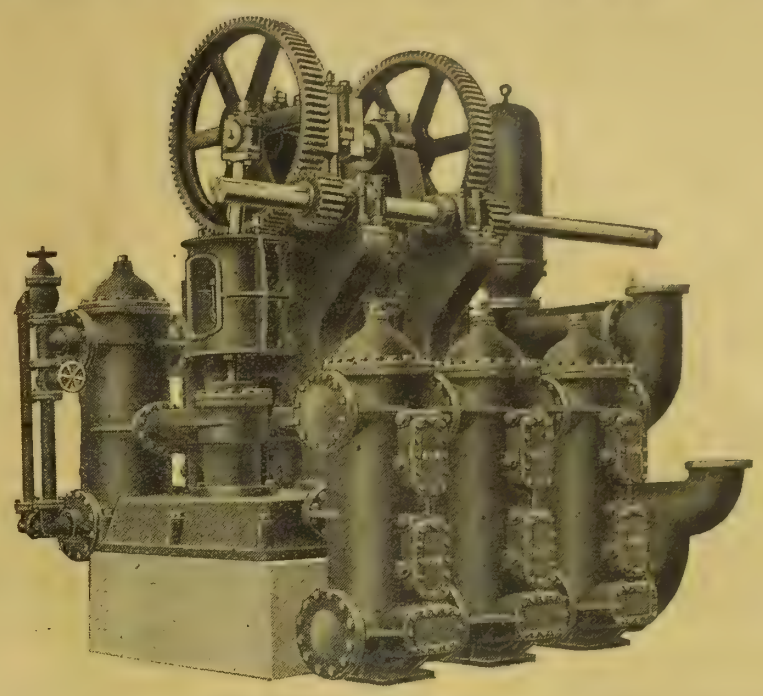
In August the United States Geological Survey passed upon and recommended for designation 23,142 acres under the enlarged homestead act. This makes a total of 190,394,927 acres of land in the public land states which have been declared enterable under this act in 320 arce tracts.

Do your cows milk hard? Send 50 cents for teat expander. O. J. Weber Co., 225-227-229-231 East Sixth St., Los Angeles, Cal.

Golden Gate Park

Is Irrigated by

DOW PUMPS



Visitors to San Francisco are always interested in those large Dutch windmills along the beach near the Cliff House.

While giving the beach a touch of beauty, these mills are saving the people of San Francisco many thousands of dollars in taxes. Down in the base of their towers are immense Dow Pumps, pumping one million gallons of water every day. This water irrigates the famous Golden Gate Park flower gardens. Dow Pumps were selected for this work because of their reliability and the large amount of water pumped with the power available.

When you start looking for a pump, remember that we make pumps for every service, and the pump suitable for your ranch will be just as reliable as the pumps in Golden Gate Park.

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The Safe Deposit and Storage Department is the largest and best equipped in the West

Apple Annual

WATSONVILLE

October 9 to 14

Special Rate excursion tickets from all points.

Sale Dates

October 6 to 14

Final Limit

October 20th, 1911

SEE AGENTS

SOUTHERN PACIFIC

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600 South Spring Street.
Arcade Station, Fifth and Central Ave.
River Station, 1500 San Fernando St.

PASADENA OFFICE
148 East Colorado Street.

When writing advertisers, mention Cultivator.

Household Department

OPPORTUNITY.

A craven hung upon the battle's edge,
And thought, Had I a sword of keener steel—
That blue blade that the king's son bears—but this
Blunt thing! He snapt and flung it from his hand
And, lowering, crept away and left the field.

Then came the king's son, wounded, sore, beset,
And weaponless, and saw the broken sword,
Hilt buried in the dry and trodden sand,
And ran and snatched it, and with battle shout
Lifted afresh and hewed his enemy down,
And saved a great cause that heroic day. —E. R. Sill.

AN APARTMENT HOUSE TRAGEDY.

This is the story of a young man and woman who had thought well enough of each other to get married and take chances. There is no moral attached, so if that is what you are looking for stop at this point.

They lived in an apartment house, the name of which need not be given, because the name of such a place means no more than the title of a Pullman car, and lends no greater distinction. Enough, that it was the ordinary sort of apartment house, with a hall that started to be showy and only got so far as the tawdry, and had all the modern inconveniences. There was a landlady whose hand had been calloused by the touch of coin. Her manner was artificially polite, so that when she smiled her face threatened to break and surprised you by not doing so.

There were no children in the place. That was understood. The landlady, if ever she had perpetrated any, had hidden her tracks. In the background a landlord was glimpsed occasionally, but nobody ever found out what he was for.

The roomers were for the most part unmarried — maidens still hopeful, spinsters dissembling their regret, sour bachelors. There were several very young couples, and some so elderly that such sons and daughters as might have been charged against them were out in the world.

So in all the apartment house there was no sound of childish voices, no smudge of little fingers, no romping in the halls. It was a peaceful place except when the bachelors were more crusty than usual or the feminine contingent got opportunity to rend some temporarily absent sister.

One day the man's wife told him a secret whereat he grinned broadly and then looked troubled.

"You know, my dear," he said, "that babies are not permitted in this house. It's dead against the rules."

She did know it, but thought that her baby, by getting in on the ground floor, as it were, would have exceptional rights. With this view she sought to cheer him.

After a while, in the manner of her kind, she went away to her mother's. During her absence the husband was kept informed, and one day in a burst of confidence told the landlady that he was a dad. He threw the news out as a feeler.

"Oh, too bad," said the landlady. "How very careless! And you have been such good tenants."

When a man of ordinary discernment it spoken of in the past tense he knows what has happened to him. The husband and father went forth to seek shelter for the wife and baby. Gradually there dawned upon him the conviction that parentage is taboo, that possession of a child is a banality. It hurt his feelings, and it aroused his ardor.

Some advertisements stated "No children." At these he merely hurled anathema. But many others meant "No children," the information having been omitted from print on the score of economy. He lost much time in chasing down such false clues to all the comforts of a home.

It must be acknowledged that he was treated with courtesy, although the pity blended with it annoyed him. Nobody exactly slammed the door in his face. None went so far as to kick him down the steps. He was given to understand that while in certain relations he might be a good citizen, the guilt of fatherhood was upon him, and he had become an impossible person.

At first this filled him with resentful ire, but at last his spirit was broken. He assumed a hunted look. He wondered vaguely if any landlady in the universe ever had had a baby, and if so, where she had sequestered it during the years it was unfit for human association. His mind could not stretch to imagining that a landlady might at one time have been a baby herself.

One day he sought an apartment house that had a friendly look. There were good rooms and reasonable prices.

"Madam," he said after the inspection, "I like your rooms, your location, and you seem to have a kind heart. I can pay your rates. My income is assured, as I am a journalist, but there is a shadow over me and my wife. I have trod miles of pave in quest of bed and roof, and have been turned down regularly. I throw myself on your mercy."

"Anything wrong with your marriage certificate," she asked.

"Not a thing. Signed, sealed and attested. Ceremony performed by a high-class parson who stung me for $25. Groom wore conventional black. Shoes, rice—all that sort of business. We have good family records. Are not given to kleptomania, dipsomania or ragtime. Are opposed to anarchy, favor the recall even of judges, don't read Shaw. Have excellent table manners and decent clothes. Believe in the individual drinking cup, go to church sometimes, and mind our own business. I do not smoke in the bedrooms and she does not stick wads of gum on the furniture. No, we have not been leading double lives. Worse than that. We have a—may I whisper it?—We have a baby. A cute little beggar with pink toes. I am told, an extra fine boy. I am going to train him to be a journalist and have great hopes for his future."

"Good heavens," cried the landlady, "and I had almost got you to sign a lease."

With a shudder she turned away. The man stood alone. A sign, "Family Apartments," stared mockingly at him. "If only I chewed tobacco," he muttered, "it would be a pleasure to spit copiously on that flaunting lie. What is a family? A man and a woman? And by the addition of one toothless stranger it becomes an aggregation of outcasts. Faugh!"

To this comment he appended other remarks better not of record.

That night he wired his wife:

"Have a chance at a bungalow situated in a ten-acre pasture. Privilege of keeping baby, cat, dog and nurse girl if you can bribe one. If satisfied come on with youngster. If you insist on apartment, poison the kid and come alone."

He wrote this out of bitterness of soul and she, not understanding the situation, stuck him with a telegram, 40 cents collect, stating that he was a brute who didn't deserve a baby.—Henry James in L. A. Tribune.

RECIPES.

Orange Fritters.

Make a batter with one cupful of milk, two well-beaten eggs, two ounces of soft butter, a pinch of salt, and one-half pound of flour sifted with one teaspoonful of baking powder. Peel the oranges and divide into sections, removing all tough, white skin, but not breaking the thin skin of the section; mix them with the batter and drop by spoonfuls in boiling hot cooking oil, having a section of orange in each spoonful. Fry to a golden brown, drain on paper, and roll in powdered sugar.

Cranberry Puffs.

Two cupfuls of flour, four level teaspoonfuls of baking powder, one-half level teaspoonful of salt, two level

"Light Work"

There is no needless delay about putting the horses up for the night and getting into your own comfortable home when the work is lighted—and lightened—by a Rayo lantern. Rayo lanterns give such a strong, steady light you can put your hand on what you want in a second.

Rayo lanterns are the best and brightest on the market.

Made in all kinds of styles and sizes, to suit any use.

Finest material and workmanship; most light for the oil consumed; will not blow out.

All Rayo lanterns are equipped with selected Rayo globes, clear, red or green, as desired. Wicks inserted in burners, ready to light.

Dealers everywhere; or write for descriptive circular direct to any agency of the

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THOUSANDS of progressive farmers are buying Harley-Davidson Motorcycles this year. Buying them because they travel 10 miles for a cent, less than the wear and tear on their team and rig if they drive.

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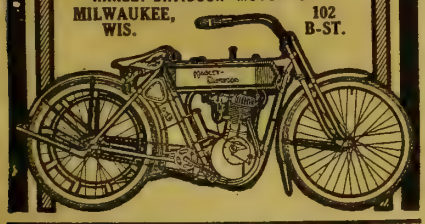

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tablespoonfuls of sugar, four level tablespoonfuls of butter, two eggs, one cupful of milk, one pint of cranberries. Sift together the flour, baking powder, salt and sugar; work in the shortening with the fingers, then add the eggs well beaten and mixed with the milk. Beat well, add the cranberries, and half fill buttered cups. Steam one hour in a closely-covered steamer. Serve hot, with a generous quantity of hot sweet sauce.

Sweet Potatoes.

Two large or three medium sized ones will about fill a three-pint baking dish. Boil without peeling for 15 minutes if small, or 20 minutes if large. Peel, cut in lengthwise slices about half an inch in thickness. Have two tablespoonfuls of butter melting in an earthen dish. Put in a layer of the potatoes, which sprinkle with brown sugar, dot with bits of butter, and repeat until within an inch of the top of the dish, finishing with the sugar and butter. Pour over half a cupful of hot water, cover and cook in a moderate oven for ten minutes, then remove the cover and cook for fifteen minutes longer.

Baked Rice.

This requires no egg, and is much liked when cooked just long enough so that the rice is merely held together by the liquid which has become creamy. The secret is in very slow baking. If the fireless cooker is used, reduce the quantity of milk by two cupfuls, as there is no evaporation in this way of cooking. Put three-quarters cupful of well-washed rice into a buttered baking-dish, add one-quarter cupful of sugar, a rounding tablespoonful of butter, six cupfuls of milk and a level teaspoonful of salt. Set in the oven, stir with a fork at the end of five minutes and again in five minutes more. Now cook slowly two hours or more. Serve plain or with cream and powdered sugar, or with a bit of jelly on each portion.—Country Gentleman.

HOMELY HINTS.

To remove marks and scratches on dull finished furniture steam it under wet newspapers and a hot flatiron. This must be done only if the furniture has a dull finish.

Don't dampen silk when pressing; a moderately hot iron with cloth or paper, between the garment and the iron, when the pressing is done on the right side should be used.

In dusting a room, do not fail to dust the brass or iron bed well. Remember that the head and foot pieces under the springs should be as free from dust as the parts above.

Cheese will be kept moist and free from mould if wrapped in cloth wrung out in vinegar.

Chopped pistachio nuts are delicious served with plain vanilla cream or blancmange.

If a boiled egg is fresh it will dry quickly when taken from the water.

WEIGHTS AND MEASURES.

Two tablespoonfuls of butter make one ounce.

Four tablespoonfuls of flour make one ounce.

One cup of butter packed solid equals one-half pound.

One cup of granulated sugar weighs one-half pound.

Five medium eggs without shells make one-half pound, or four with shells weigh one-half pound.

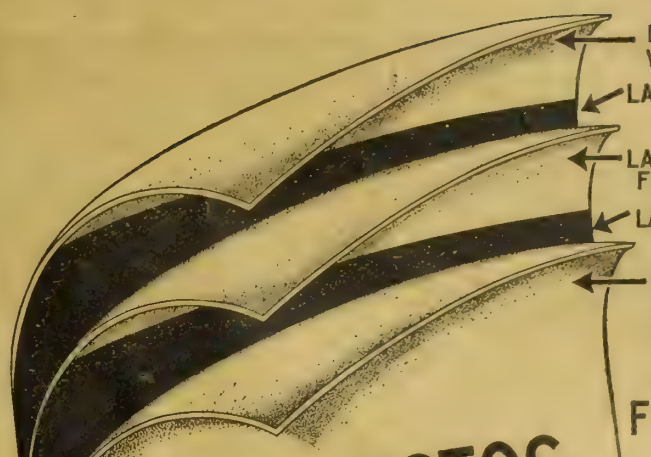
One cup of chopped meat packed solid weighs one-half pound.

One cup of milk or water is equal to one-half pound.

In nearly every recipe, unless it calls for a level measure, a tablespoonful or teaspoonful means that the substance should rise above the level as much as the spoon rounds under. To measure half a spoonful divide lengthwise of the spoon and for a quarter take half of this.—N. Dakota Farmer.

A PLACE FOR COLLARS AND BELTS.

The convenient shirt waist box is made even more useful by tacking a couple of pieces of elastic, about an inch wide, across the inside of the cover. These should be drawn very tight, and reinforced with one or two tacks in the middle of the strips, if the box is long. They make an excellent place for holding collars and belts.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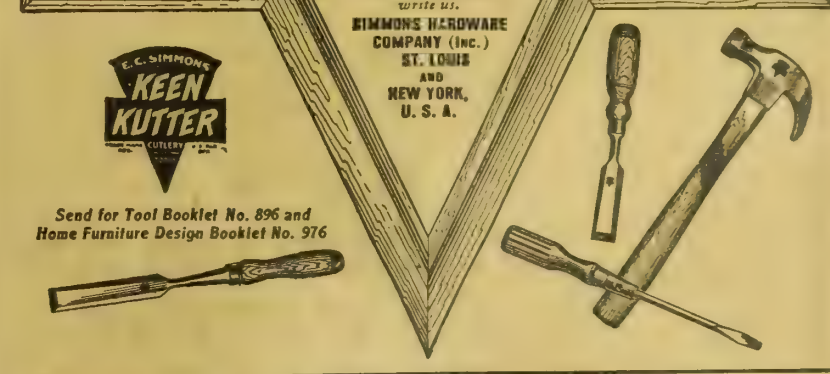

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Let us send you our Catalog. It's free.

JUBILEE INCUBATOR CO., Sunnyvale, Santa Clara Co., Cal

San Francisco-Los Angeles Produce Markets

Los Angeles Market

LOS ANGELES, Sept. 27, 1911.

Butter.

Butter stands at last week's quotations, with liberal receipts and general firmness prevailing. Receipts about 50,000 lbs. daily.

Prices to trade 2½c in advance of the following Produce Exchange quotations:

Extras	26½
Firsts	25
Ladles	23
Country	20

Cheese.

Local Anchor	16
Oregon Daisy	16½
Northern Fresh	16
Domestic Swiss	18
Imported Swiss	32

Eggs and Poultry.

Case counts have advanced 2 cents during the week, as have extras. Market very firm. Receipts very light. Northerns very scarce.

Paying prices f. o. b. Los Angeles are:

Local ranch, candled	42
Case count buying price	38
Eastern	28@30
Eastern storage	25@26
Pullets	20

Dealers pay for live poultry f. o. b.:

Hens, per lb	11@15
Roosters	6@7
Broilers	14
Fryers	12
Roasters	21
Turkeys	23@27
Ducks	12
Geese	10
Guinea hens, doz	4.00
Squabs, doz	1.65

Live Stock.

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs	7¾
Prime steers	6
Heifers	6
Calves, per lb	6½
Sheep, ewes, per head	4.75
Lambs, per head	3.75@4.25
Wethers	5.00@5.50

Potatoes.

Wholesale prices are:

Sweets, yellow, ctl	1.75@2.25
Highlands, ctl	1.30@1.65

Onions.

Wholesale quotations:

Australian Brown, ctl	1.35
Silverskins, sack	1.75@1.85
Yellow Danvers, ctl	1.35
Garlic	5@6

Vegetables.

Wholesale quotations:

Artichokes, northern, doz	90@1.10
Beets, doz bunches	25@30
Bell peppers, lb	4@5
Beans, wax	5@7
Beans, Limas	7@8
Green chilis	3@5
Chilis, dried	12@13
Cucumbers, lugs	30@40
Cabbage, sack	75@85
Cabbage, red, lb	3
Cauliflower, doz	1.00@1.25
Celery, new, crate	1.50@1.75
Carrots, sack	90@1.10
Corn, lug	45@60
Egg plant	3@5
Horseradish, lb	13½
Onions, green, doz bunches	20@25
Kohl-rabi, doz bunches	40
Leeks, doz	45@50
Lettuce, crate	90@1.10
Mushrooms, lb	50@1.00
Oyster plant, lb	15@20
Okra	6@8
Peas, lb	5@7
Parsley, doz bunches	25@30
Turnips, sack	90@1.00
Radishes, doz bunches	15@20
Rhubarb, Strawberry	1.00@1.25
Spinach, doz	15@20
Squash, summer	30@40
Spearmint, doz	25@30
Tomatoes, lug	25@35
Turnips, sack	1.00@1.25
Watercress, doz	35@40

Citrus Fruits.

Valencias	3.50@4.00
Grapefruit	2.00@4.00
Lemons	2.00@3.75
Limes, hundred	1.25

Fresh Fruits.

Wholesale prices on the market are:

Alligator Pears	1.50@2.50
Apples, Alexanders	1.00
Apples, Bellflowers	1.15@1.25
Apples, Gravensteins	1.00
Apples, Skinners	1.00
Apples, Spitzenbergs	1.65@2.00
Apples, Crab, lug	1.50
Bananas	4@4½
Casabas, crate	1.50
Cantaloupes, small	75@1.00
Cantaloupes, large	1.50@2.00
Figs, box	75@1.25
Grapes, Thompson Seedless, lb	3
Grapes, Black Hamburg, lug	65
Grapes, Muscats	65
Grapes, Malagas, lug	90@1.00
Grapes, Tokays	80@90
Loganberries	6@8
Nectarines, lug	1.00@1.25
Peaches, lug	50@75
Pineapples	7@8
Plums, Clymans, lug	1.50
Plums, Tragedy	1.50
Pears, Bartlett, lb	5
Quinces, lug	1.00@1.25
Blackberries	6@8
Raspberries	10@12
Strawberries	4@8
Watermelons, lb	¾@1

Dried Fruits.

Wholesale prices to retailers are:

Evaporated Apples, fancy, lb	12@12½
Apricots	16@17
Figs, box	1.65@1.85
Peaches	11@12½
Nectarines	12
Pears	12@13
Prunes	9½@14
Plums	10

Beans Dried.

Wholesale quotations:

Limas	6.00
Black eyes	4.50@5.00
Pinks	5.00
Lady Washington	4.25
Small white	4.10@4.25
Garvanzas	4.50
Bayous	4.50@5.00
Lentils	6.50@7.00
Mexican Reds	4.75@5.00

Nuts.

Wholesale quotations:

No. 1 soft shell walnuts	18
Almonds, IXL, lb	19@20
Pecans, polished	15@17
Peanuts, Eastern	8
Peanuts, California	6
Pine Nuts	18

Honey.

Wholesale quotations:

Extracted water white	8½
Extracted light amber	7½
Comb water white	16@17
Light amber	13@14
Beeswax	30

Hay.

Buying prices f. o. b. cars Los Angeles are:

Barley hay	12.00@13.00
Wheat hay	11.50@12.50
Tame oats	15.00@16.00
Alfalfa	12.50@13.50

Grain.

Wholesale selling price f. o. b. Los Angeles:

Wheat, new, cental	1.70@1.80
Corn	1.85@1.95
Kaffir	1.80
Millet	3.75
Popcorn	4.75@5.00
Egyptian corn	1.80
Red oats	1.80
Seed barley	1.50
Milo	1.90

Feed Stuff

Wholesale selling price f. o. b. Los Angeles:

Alfalfa meal	1.15
Beef scrap	3.10
Cracked corn	1.90
Cracked wheat	1.90
Shorts	1.95
Bran	1.70
Oil cake meal	2.50
Feed meal	1.95
Rolled Barley	1.75
Middlings	1.85

San Francisco Market

SAN FRANCISCO, Sept. 26, 1911.

Butter.

Butter receipts are light, as is the demand, and prices remain exactly as last week except on firsts, which show a half point advance.

Prices to trade 2½c in advance of the following Produce Exchange quotations:

California extras, lb	27
Prime firsts	25
Firsts	24
Seconds	22

Cheese.

Cal. flats	11@14½
Cal. flats	11@14
Cal. Y. America, fy, new	15@16½
Oregon, fancy	13½

Eggs and Poultry.

Eggs show a material advance, 5 cents on nearly all grades. Market is strong.

Official quotations of the San Francisco Wholesale Dairy and Produce Exchange are:

Fresh ranch extras	43
Firsts	35
Seconds	21
Select pullets	33
Eastern seconds	16
Select pullets	27½
Hens, doz	4.00@9.00
Fryers, doz	4.50@5.50
Ducks	4.00@7.00
Broilers	2.50@4.00
Roosters, doz	4.00@9.00
Geese	2.00@3.00
Goslings, pr	2.00@2.25
Pigeons	1.50@2.00
Turkeys	24@27
Squabs	2.00@2.50

Live Stock.

San Francisco prices, gross weight:

Steers	4@5¾
Cows and heifers	3@4½
Calves, lb.	5@6¾
Hogs	5@7½
Wethers No. 1	3¾@4
Milk lambs	4¾
Ewes, No. 1	3¼@3½

Potatoes.

Wholesale market quotations:

River, whites, ctl	1.00@1.25
Alamedas	1.50@1.75
Sweets, ctl	1.60@1.85

Onions.

Yellow, new	75@85
Garlic, new, lb	3@4

Vegetables.

Wholesale quotations:

Asparagus, box	1.00@1.75
Beans, string	2½@3½
Beans, wax	1½@2½
Limas	2@3
Bell peppers, box	75@1.00
Cabbage, ctl	75@85
Carrots	70@75
Cucumbers, box	35@40
Corn, sack	50@1.25
Chili peppers, box	25@40
Celery, crate	1.50@2.50
Egg plant, box	20@30
Cauliflower, doz	50@60
Lettuce, crate	75@2.00
Okra, box	40@60
Peas, sack	1.75@2.00
Hubbard squash, sack	1.00
Summer squash, lug	35@50
Squash, Marrowfat	60@75
Tomatoes, box	25@40
Turnips	60@75

Citrus Fruits.

Valencias	4.50
Grapefruit	3.00@4.00
Lemons	1.50@5.50
Limes, Mexican	5.00@5.50

Fresh Fruits.

Apples, Gravensteins	75@1.60
Cantaloupes, standard	35@1.25
Cantaloupes, Rivers	80@1.00
Nutmegs, large, crate	25@40
Figs, layer, single	25@60
Grapes, Thompson Seed., crate	40@50
Grapes, blk	40@50
Grapes, Muscat, box	40@50
Grapes, Tokay	25@40
Pears, box	75@1.50
Peaches, box	40@1.00
Plums, box	40@60
Prunes, German, box	65@75
Quinces, box	75@1.00
Loganberries, chest	4.00@6.00
Blackberries, chest	5.00@6.00
Raspberries, chest	4.00@8.00
Strawberries	3.00@5.00
Pineapples, Hawaiian	2.00@3.50
Bananas	1.00@1.50
Watermelons, doz	1.25@2.00

Dried Fruits.

FRUITS—1911 crop, f. o.b., carload lots, per lb.—Apples, 9@11c; Apricots, 14@17c; Peaches, 9½@11½c; Prunes, bulk basis, 5¾@7c; per lb., 4¾@10c, with a premium of ½@1c on large sizes; Figs, 5@6c for White; Pears, 10@13c.

RAISINS—1911 crop: Seeded, per pkg.—Fancy, No. 16, 7¼c; Choice, No. 16, 7c; Loose Muscatels, in 50-lb. boxes—Standard, 4-crown, 6⅛c; do, 3-crown, 5½c; do, 2-crown, 5¼c. Seedless—Muscatel, 5¼@5½c; Sultanas, 6@6¼c; Thompson's 7@7½c.

Nuts.

Walnuts, No. 1 soft shell	16@16¼
Walnuts, No. 1 hard shell	14½
Almonds, '10, N P U	16@16½
Almonds, '10, Nonp	18@18¾
Almonds, '10, I X L	16½@17¼
Pecans	14@17
Chestnuts, California	6@8
Peanuts	5@5½

Beans Dried.

Limas	5.00@5.10
Pink	4.10@4.25
Black eyes	4.50@5.60
Small white	3.65@3.80
Large white	3.60@3.70
Kidneys	5.25@5.35
Garbanzos	3.00@3.25
Bayou	3.75@4.00
Horse beans	2.60@2.75
Red Mexicans	5.25@5.40
Cranberry	3.30@3.75

Hops

Hops, coast, 1910	28@32
Hops, 1911 contracts	30@36
Hops, Oregon, 1911	30@36

Honey.

Water white, comb, '11	15
Dark comb	12½
Extracted white, '11	9@10
Extracted dark	6½
Beeswax, lb	24@30

Hay.

Scott, Magner & Miller say:

Arrivals of hay for the week ending today have been 3850 tons, which is about a 25 per cent decrease from arrivals for several weeks past. This decrease in arrivals is perfectly natural and expected for the reason that practically all the hay is cleaned up from the fields in the large districts which usually ship to the San Francisco markets. A large part of the hay that has come in during the last two weeks has consisted of alfalfa and low grade types of hay coming by water from the bay and river landings.

Comparatively little hay of the good qualities has been coming in; in fact, the fields have been cleaned up to such an extent that the better grades of hay will have to be taken from the warehouses now to supply the current demands. A little high-type hay from the warehouses has already been brought into the market and sold at topmost figures. In sympathy with the above conditions our market has advanced about $1.00 per ton on the choicer types of wheat hay, and the market at this time for this variety is decidedly firm with not much offering. Fancy red oat hay is freely asked for, but the warehouses must be drawn on to supply this type.

The alfalfa hay market continues unchanged. The heavy shipments that are coming in steadily have not affected the situation one way or the other. It is not expected that there will be any change in the basis of values on this article for some little time.

We quote the wholesale prices in round lots on today's market as follows, viz:

Fancy wheat hay	19.00@20.00
No. 1 wheat or wheat & oat	16.50@17.50
No. 2 wheat or wheat & Oat	13.00@14.00
Choice tame	15.00@16.00
Other tame oat	10.00@13.00
Wild oats	10.00@12.50
Stock hay	5.50@6.00
Alfalfa	9.00@11.00
Straw, bale	55@65

Grain.

Wheat	1.45@1.47½
Barley, fancy	1.63¾
Barley, good to choice	1.60@1.62½
Barley, poor to fair	1.52½@1.57½
Corn	1.60@1.62
Oats, red	1.57½@1.62½
Rye	1.47½@1.52½
Mustard, brown	5½
Alfalfa seed	18
Millet	3@3½
Flaxseed	5@5½
Broom corn seed, ton	30.00

Feed Stuff

Alfalfa meal	15.00
Bran, ton	28.00@29.00
Feed cornmeal, ton	38.00@39.00
Cracked corn	38.00@39.00
Rolled barley, ton	33.00@34.50
Rolled oats, ton	31.00@32.00
Middlings	32.00@34.00
Oil cake meal	42.50@43.50
Cocoanut cake, ton	24.00@25.00
Mixed feed, ton	25.00@27.00
Shorts	29.00@30.00

Deciduous Fruit Market

Manager F. B. McKevitt of the California Fruit Distributors reports:

Sacramento, Cal., Sept. 23, 1911.

The following gives the number of cars of deciduous fruit shipped from all points in California for the week (7 days) ending Friday morning, September 22, 1911:

Peaches—223¾ cars. Salways are going forward in small volume, and will continue to do so during the next ten days. It is not likely there will be any straight cars shipped, and what few there are will nearly all go to auction.

Plums—2½ cars. No straight cars of plums are now offering, the quantity represented in this week's shipment being made up of scattering lots from various sections.

Pears—57¾ cars. The shipment of fall and winter pears is now of as large a volume as can be expected at any time during the season. It is likely that after the coming week the movement will decline rapidly.

Grapes—493½ cars. Practically the same quantity of grapes moved out this week as during the preceding one. In the Lodi district there has been a considerable curtailment in the shipment, but scattering lots from other sections have very nearly made up the difference. There are a few cars of Malagas moving, and they will continue to be offered in a limited way for some time to come if markets justify. Tokays are in ample supply from the Florin and Lodi districts; the former will practically finish shipping during the coming week. The quality of the Lodi Tokay has never been as good as at present. The fruit is well developed, has now plenty of sugar, and the color is perfect. It is safe to say that no finer grapes ever left the state of California than are available at the present time.

Weather conditions continue very favorable. There was a storm threatened on the 21st, but the clouds have rolled by and the sky is now clear.

Comparative statement of shipments up to September 16, 1911:

	1910	1911
Cherries	250½	216¼
Apricots	289¾	214½
Peaches	2445¾	1934¾
Plums	1552½	1351½
Pears	2223	2044¼
Grapes	2204½	2140¾
Sundry	6	3
Total	8972	7905

Citrus Fruit Market

LOS ANGELES, Sept 27, 1911.

The situation as to Valencias is very satisfactory, even the small off sizes, the large quantity of which have been embarrassing, are meeting with fair demand. These run, however, over 30 per cent of the total output, though quite a number have to be thrown into the auction markets.

Lemons are exceptionally strong. The demand is good and every offer is quickly picked up; $5.00 to $5.25 is readily commanded for the better grades.

Shipments.

Shipments of oranges to date since November 1st, 1910, 36,110 cars, lemons 6,398, or a total for the season of 42,508. Shipments to same date last season were 24,829 cars of oranges, 4,576 lemons, or a total for that season of 29,405.

NEW YORK, Sept. 21.—Ten cars Valencias, one car lemons sold. Market strong on both oranges and lemons. Weather fair.

VALENCIAS—	Avge.
Sceptre, S S Exchange	$4.95
Rooster, S S Exchange	3.90
Stag, A C G Exchange	4.60
Pointer, A C G Exchange	2.60

Cream Separators, all sizes and prices. Guy F. Kelsey & Co., 106 East Eighth St., Los Angeles, Cal.

Hunter, A C G Exchange	1.80
Quail, O K Exchange	2.90
Pointer, A C G Exchange	2.40
Hunter, A C G Exchange	1.70
Red C, Covina Exchange	2.95
Cougar, Covina Exchange	2.85
Pointer, A C G Exchange	2.45
Hunter, A C G Exchange	1.85
Titus Ranch, fy, San Marino G P A.	4.50
El Toreador, sd, San Marino, G P A.	3.65
Corona, National O Co	3.95
Corona, stds, National O Co	3.20
Old Mission, fy, Chapman	5.85
Old Mission, ch, Chapman	5.00
Golden Eagle, sd, Chapman	4.10
Lady Rowena, Chapman	3.40
DuQuesne, DuQuesne F Co	4.35
Fort Pitt, DuQuesne F Co	3.25
LEMONS—	
Liberty	$4.85
Foxaway	4.40

BOSTON, Sept. 21.—Five cars sold. Weather favorable. Market unchanged.

VALENCIAS.	Avge.
Stag, A C G, Charter Oak	$4.55
Hunter, A C G, Charter Oak	2.40
Hunter, A C G, Glendora	1.90
El Toreador, sd, San Marino	4.30
Standard, sd, National O Co	3.60
Pointer, A C G, Charter Oak	2.80
Pointer, A C G, Glendora	2.60
Titus Ranch, fy, San Marino	5.05
Orchard, or, National O Co	4.30
LEMONS—	
Las Fuentes, Crocker Sperry	$4.25
Montecito, Crocker Sperry	3.60

NEW YORK, Sept. 25.—Ten cars Valencias and two cars lemons sold. Market steady on oranges, strong on lemons. Fair.

VALENCIAS—	Avge.
Red C, Covina Ex	$3.90
Mayflower, fy, Stewart F Co	4.50
Pilgrim, Stewart F Co	3.75
Buena, Stewart F Co	3.20
Titus Ranch, fy, San Marino GPA	3.70
El Toreador, sd, San Marino, GPA	3.00
Corona, National O Co	3.90
Corona Stds	3.10
Old Mission, fy, Chapman	5.80
Old Mission, ch, Chapman	4.85
Golden Eagle, sd, Chapman	3.95
Lady Rowena, Chapman	3.35
Old Mission, fy, Chapman	5.95
Old Mission, ch, Chapman	4.80
Golden Eagle, sd, Chapman	3.95
Lady Rowena, sd, Chapman	3.35
Sceptre, S S Ex	4.90
Rooster, S S Ex	4.05
Carmencita, S T Ex	4.40
Colombo, S T Ex	4.00
Red C, Covina Ex	3.35
Cougar, Covina Ex	2.15
Pointer, A C G Ex	2.60
Hunter, A C G Ex	1.80
LEMONS—	
Punch	$5.35
Club	4.80
Blue Flag	3.95
Silence	3.00

BOSTON, Sept. 25.—Six cars sold. Market easier on oranges, higher lemons. Warm.

VALENCIAS—	Avge.
Glendora Heights, xf, A C G, Glen.	$4.35
Evolution, A C G, Glendora	2.95
Colombo, S T, Fullerton	3.60
Robusta, A H, Pach	3.35
Hobo B, A H, Pach	2.35
Hunter, A C G, Glendora	2.20
El Toreador, San Marino, G P A	4.00
Glendora Heights, xc, A C G, Glen	3.45
Carmencita, S T, Fullerton	4.35
Las Palmas, S T, Fullerton	2.40
Hobo, A H, Pach	2.50
Pointer, A C G, Glendora	2.65

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Titus Ranch, fy, San Marino	4.70
LEMONS—	
Pet, S A Ex	$5.05
Greyhound, S A Ex	4.55

PHILADELPHIA, Sept. 25.—Two cars Valencias, one lemon sold.

VALENCIAS—	Avke.
Carmencita, S T, Fullerton	$4.50
Las Palmas, S T, Fullerton	2.60
Superior, ch, Benchley F	3.90
Colombo, S T, Colombo	4.05
Premium, or, Benchly F	4.70
California	3.35
LEMONS—	
Bridal Veil, V C, Limoneira	$4.65
Premium, or, Benchley F Co	4.70
White Cross, V C, Limoneira	4.05

ST. LOUIS, Sept. 25.—Raining. Market weak on lemons account weather. Steady on Valencias. Three cars sold.

VALENCIAS—	Avge.
S S Brand, S S, Orange	$3.50
Plain Ends, S S, Orange	2.40
LEMONS—	
Quaker Girl, S T, Whittier	$4.75
El Azar, A V G, Azusa	4.20
Greenleaf, S T, Whittier	4.05
Green Crown, A C G, Azusa	4.35

PITTSBURG, Sept 25..Three cars sold. Market steady on oranges and lemons. Cool.

VALENCIAS—	Avge.
Clown, fy, Sparr F Co	$4.40
Clown, fy, Sparr F Co	4.20
Plain Ends, Sparr F Co	3.30
Hunter, A C G, Azusa	2.10
Circus, xc, Sparr F Co	3.50
Circus, xc, Sparr F Co	4.25
Pointer, A C G, Azusa	2.70
LEMONS—	
Clown, fy, Sparr F Co	$4.65
Plain Ends, Sparr F Co	3.30
Circus, xc, Sparr F Co	4.25

CLEVELAND, Sept. 25—One car Valencias, one lemon sold. Market higher. Weather warm, cloudy.

VALENCIAS—	Avge.
George Washington, S S, Tustin	$4.60
Martha Washington, S S, Tustin	3.80
LEMONS—	
Trail, A C G, Lamanda P	$5.00
Canon, A C G, Lamanda P	4.90

CINCINNATI, Sept. 25.—Warm, raining. Market advancing on oranges.

VALENCIAS—	Avge.
Pet, S A Ex	$3.15
El Capitan, S A Ex	2.45

WOMEN IN AGRICUTURE.

The women seem to be considering horticulture and agriculture as a most desirable calling. I have a large number of letters on hand asking me what they shall consider as a crop to start farming. Now they all want to come to California to start. It seems that California is regarded as a place where one can sit down and the sunshine will do the rest. I always say to people that the things we run after rarely turn out as well for us in a financial way as those we tumble into. The way opens to us when we really try to do anything and it is often all so different to the things we had planned. Now why are these women considering coming to California? Are our men more kindly? I do not think so. I think the women must hang back from mingling in the management of the farm back East. I have before me a picture of forty-seven well-fed men, who recently formed the Illinois Alfalfa Growers association, not a woman in the picture. Surely some of the widows and spinsters do grow alfalfa in Illinois. I know out in California we women would not have let the men form that association without us.—M. E. Sherman.

FARMERS NATIONAL CONGRESS.

The Farmers National Congress, a pioneer national agricultural body, was organized to voice by resolution the wishes of the farmers of the country on questions related to agriculture.

The membership of the Congress is composed of delegates from each state appointed preferably by the governors of the respective states, but should a governor for any reason fail or refuse to make appointments, a certificate of appointment by the secretary of the state board of agriculture or state agricultural society, or by the state vice president of the Congress, is sufficient. The number of delegates from each state is unlimited.

The Farmers National Congress aims to confine its discussions and resolutions to broad national problems. Local issues are avoided, and speakers are expected to discuss national subjects in a broad national manner. The Congress is non-partisan, but is free to take up any politico-economic or other question of importance to agriculture.

The Congress has been of material service in securing much valuable legislation for the agricultural interests of the country.

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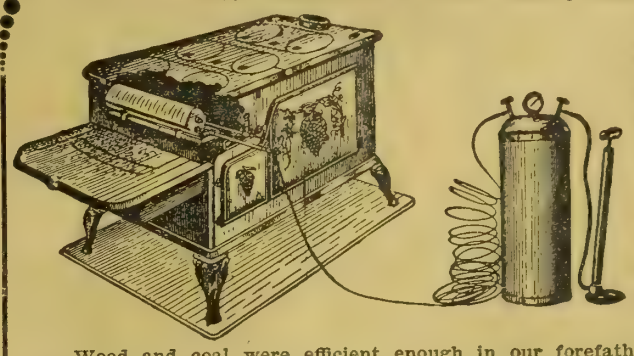

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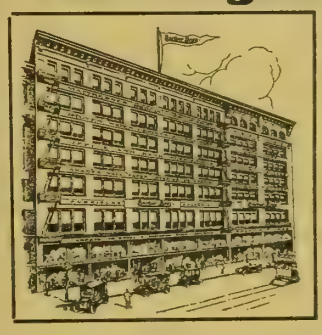

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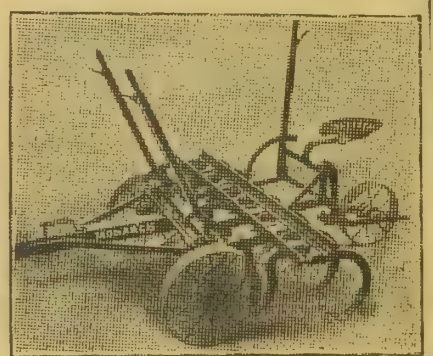
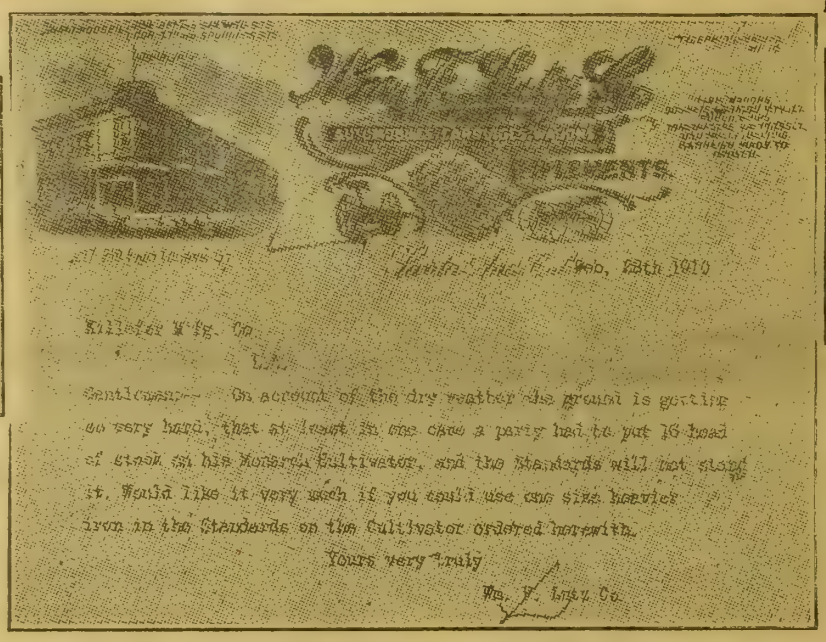


is designed for heavy work. Has great clearance (17 inches) between front and rear standards, which permits the working of trashy or lumpy ground, and lightens the draft.

Designed for field use, but has also become a favorite where deep cultivation is desired.

By the arrangement of the levers, it can be carried level, or deeper on one side, if desired, and held there.



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Gentlemen:— On account of the dry weather the ground is getting so very hard, that at least in one case a party had to put 16 head of stock on his Monarch Cultivator, and the standards will not stand it. Would like it very much if you could use one size heavier iron in the standards on the Cultivator ordered herewith.

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The principle of Rotary Cultivator, is an entirely new one; the action of the teeth in the soil being different from solid, cut away discs or ordinary Cultivators. It carries absolutely no soil with it and can be used at a greater depth with less draft than any other cultivator on the market today. The tool works close to the ground, with no wheels or attachments to catch limbs or tear off fruit,

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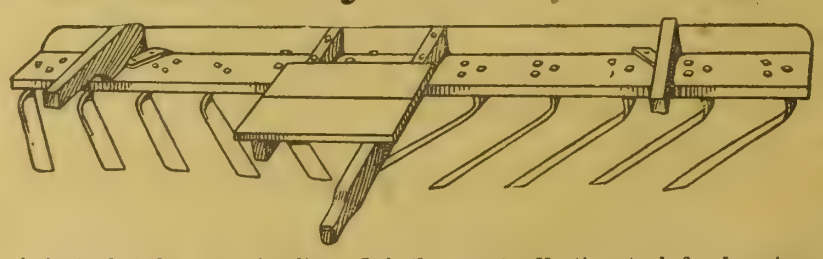

is just what the name implies. It is the most effective tool for keeping down the growth of weeds after rains or irrigating an orchard, beet, bean or grain land. Does twice the work with the same team of any other tool, and as the knives overlap each other, it is impossible to miss anything in their course. Tbey are built in 6, 8, 10 and 12 foot sizes.

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The La Verne Rotary Cultivator ***The Killefer Clean Cut Weeder***

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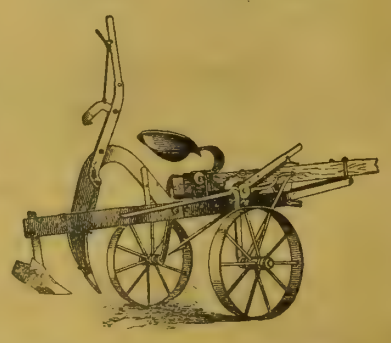
Our Jumbo Sub Soil Plow



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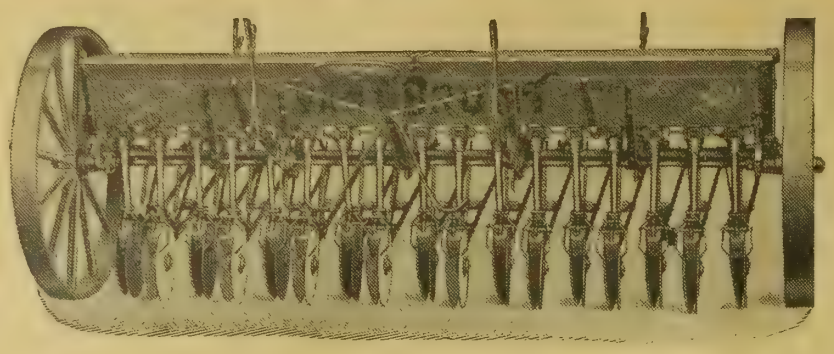

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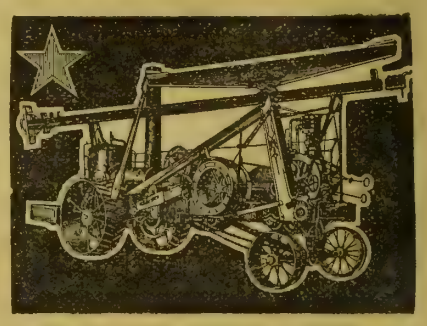

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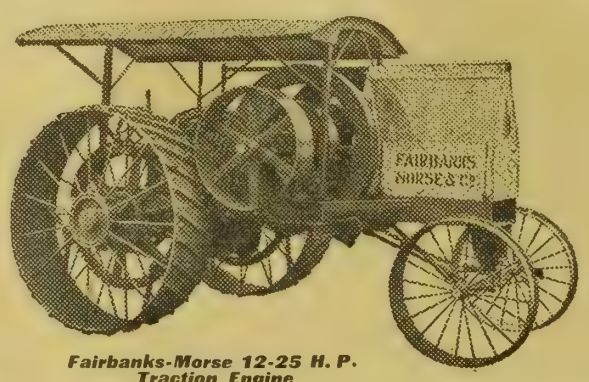

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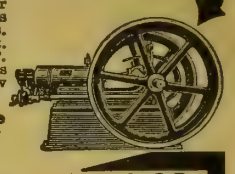

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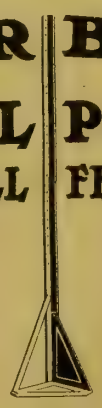

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California Cultivator

Vol. XXXVII. No. 14. LOS ANGELES: THURSDAY, OCTOBER 5, 1911 One Dollar the Year

Nurserymen and Horticultural Authorities

By M. McDonald, Orenco, Ore., Before Pacific Coast Nurserymen's Convention

In the early days of horticultural legislation there seems to have gone forth an erroneous idea of the true aims and purposes of such legislation. Horticultural authorities appointed to administer the laws often assumed that the only purpose for which these laws were enacted was a rigid, sometimes unreasonable inspection of nursery stock, forgetting that education should be the basic principle in the administration of all such laws, and that destruction of property should only be resorted to in extreme cases, and after all means of eradication have been tried, and then by due process of law, never upon the mere opinion of one man. Inspectors were often appointed, not because of their peculiar fitness for the work to be done, but rather to pay some old political debt. Great annoyance, inconvenience, and endless financial loss was the result of the unfair conclusions so often arrived at by inspectors, who perhaps had no previous knowledge of insect pests or fungus diseases, but who, taking their certificate of authority to inspect, as a license to enter in upon any kind of nursery property and destroy the same, without allowing the nurseryman time or opportunity to appeal to higher authority, or take his case before the courts of common law. Of course after the nursery stock had been destroyed by fire, the evidence as to whether it was affected or not, was also destroyed, and the nurseryman was left without recourse.

Unreliable Work.

Another very effective form of destroying nursery stock by unreliable inspectors and horticultural commissioners was to quarantine the shipment on the inference or presumption that the stock might be diseased or infected, and in this way creating a suspicion among the nurseryman's patrons, and cause them to refuse to receive the shipment on the pretext that they might be diseased and that the infection could not be seen at that particular date. This method was just as effective in the destruction of the nurseryman's property as if the trees had first been condemned and destroyed by fire.

Inspectors often have used their official positions to discriminate between the nurseryman with whom he was on friendly terms, and the one who did not live in his vicinity or state, sometimes condemning whole shipments on a mere technicality, while stock of the local nurseryman, who was a friend of the inspector, would be passed and a certificate issued even when found to be in a diseased condition.

This point is well illustrated in an experience the speaker had some years ago in one of the Pacific Coast states. A large shipment of trees had been condemned and destroyed by fire, without allowing the nurseryman an opportunity to prove whether the shipment was diseased or not, only a very few peach root borers having been found in the entire carload of mixed trees, at the same time a tree yard a few miles away, containing thousands of pear trees, carrying this same inspector's certificate, and being distributed with his knowledge and consent, was found to be literally covered with San Jose scale. In this case the nurseryman who had the diseased pear trees was a relative of the inspector, while the nurseryman whose carload of trees was destroyed, was from a foreign state. When the inspector's attention was called to this open violation of the law, he passed it off with the remark that they did not mind San Jose scale in their section, and yet the very law under which he was authorized to inspect, specifically mentioned San Jose scale as one of the pests that was to be especially fought.

Inspectors always should be selected because of their fitness for the work and only after some form of examination was gone through that would determine their qualifications for the work to be done.

Under Bonds.

A man to whom is entrusted work carrying such great responsibilities and power over the property of other persons should be under bonds, or in some way held responsible for the faithful performance of his duties.

Nurserymen Should Aid.

Looking at this subject from the other side, nurserymen were very slow in the earlier days of horticultural legislation to appreciate the great benefits that would come to their particular business through the enactment of legislation which had for its purpose the control and ultimate eradication of fruit tree pests and fungous diseases, and too often it was hard to get the nurseryman to fall into line and work in harmony with the horticultural authorities, for the extermination of these pests and diseases. It has probably taken as great an effort on the one hand to get the nurseryman to realize that horticultural laws, when impartially enforced, are of as great benefit to him as to the orchardist,—as it was to get fruit tree inspectors to realize that such laws were not made to worry, annoy and destroy the property of the nurseryman.

However, these conditions have, to a very great extent, passed away, and today we find the nurserymen and the horticultural authorities working in harmony for the mutual upbuilding of their common interests, except in some of the newer sections, or where the nurserymen and inspectors have not been brought together to discuss these vital subjects of mutual benefit to both; and here let me say that in my opinion the Pacific Coast Association of Nurserymen has done more than any other one medium to bring about that feeling of harmony and good will that today exists between the nurserymen and inspectors. This condition has been brought about by this association inviting the commissioners and inspectors to meet with the nurserymen at these annual gatherings, at which time papers have been read and discussed, bearing upon every phase of the question until today, in this, the great state of California, where possibly there has been more discord and bitterness between the nurserymen and the authorities than in any other state, and where it was supposed the hatchet would never be buried, and the pipe of peace never smoked.—we have with us as our honored guests some of the most learned and noted horticultural authorities of the day ,who, I am told, are also preaching this same gospel of peace, harmony and good will to all.

Cured a Grouch.

As an example of what this association has done in bringing together the different interests to discuss these questions of mutual interest, allow me to tell you a little story regarding a fruit grower, resident of one of our Pacific Coast states, who had a supposed grievance against all nurserymen. This man was usually found at all gatherings of a horticultural or semi-horticultural nature, and was in the habit of addressing such gatherings, and he never missed an opportunity to tell the people what a terrible lot of fellows the nurserymen were. In his estimation, every man who engaged in the nursery business was a criminal, and upon every occasion he roasted the nurseryman to a finish.

Well, the members of the Pacific Coast Association of Nurserymen conceived the idea of inviting him to address them at one of their annual meetings, and there let him air his grievance before us in a body. The association even went so far as to hold its annual meeting in his town. He came to the meeting, told his story, which was the same old story of misplaced confidence. He had bought some trees from one of his neighbors who was really not a nurseryman, but rather an orchardist, growing nursery stock on the side.

Some of the trees proved to be untrue to name, and forever after, until he attended this meeting and was converted, he supposed that all nurserymen were fit subjects for the penitentiary. The association took pains to show him the difference between the real nurseryman and the orchardist who is just growing a few trees as a side issue, and also explained to him the great responsibilities that nurserymen carried; that they were really a part of the great horticultural interests of the country, as well as the orchardist, and as a consequence he was converted, and is today one of the best friends the nurseryman has. He goes to the horticultural meetings now and instead of knocking, he explains to the orchardist the importance of buying his trees from reliable nursery sources, also advising the mutual co-operation of nurseryman and orchardist.

Interests Are One.

Our experience with this man simply illustrates the great necessity and importance of association; the coming together whenever occasion permits of the fruit grower, the horticultural authority and the nurseryman, counseling with each other as to the best methods for the enforcement, along fair lines, of the horticultural laws, so that through their united efforts all insects, pests and diseases injurious to fruit trees may be kept in check and so far as possible finally exterminated, thereby reducing the injury done to the minimum point, and with the least possible expense and friction; each interest recognizing that the other has an important part to play and should be protected to the fullest extent, and that all may work together as one harmonious whole in the upbuilding of the greatest industry of the Pacific Coast.

SALAD PLANTS.

By O. M. Morris.

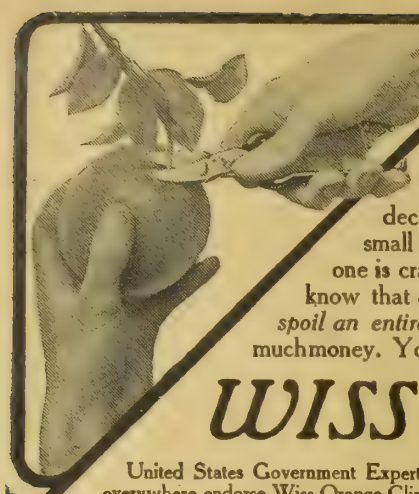
Very many cultivate nothing but lettuce as a salad plant. There are so many plants that are now available for this purpose that a list and description of them may have interest.

After lettuce, chicory and endive are probably the most commonly used by our French connoisseurs as plants to be used straight or in mixture with lettuce in salads. Endive is as easily grown as lettuce, but chicory requires more care, to have the finest flavor. Not long ago, in my travels, a Frenchman who caters to high class French family trade showed me how he grew this delicately flavored plant to perfection. He sowed his seed in a seed bed, and when plants were quite large and strong he transplanted them into beds about four feet wide, with walks raised two or three inches to allow good irrigation. Over these beds he spread coarse straw or hay about three inches deep. This mulch was laid loosely over the plants, and the plants were allowed to make their growth underneath the straw. This method causes the plants to "bleach," and when cut they look a little like blanched celery.

Another method used by some growers is: As soon as large, healthy plants are obtainable, the "parsnip-like" roots may be lifted and transplanted into deep packing boxes. The boxes are, say, two feet deep, with six or eight inches of soil filled in and well settled. These boxes are covered with cloth or burlap and kept well watered. This process blanches the leaves in fine shape. Two or three boxes of one yard square surface will supply a family through the season with the most delicately flavored salad, or to serve as part of a mixed salad.

Chives are almost indispensable for a mixed salad. These are as easily grown as onions—either from seed or division of root clumps. There are many who also think their salad lacks flavor without the dandelion, but as this is such a pest in the garden and lawn it is not very popular with the American gardener.

Suitable plants for salads are becoming more popular and important each year, and the market gardener that can produce the finest product finds ready sale. Nearly everyone has enough space in their garden to grow all the salad plants that a family can use, of good, clean and fresh quality, surpassing any grown and marketed in the usual way.



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Every time your clippers pierce an orange's skin you open the way to decay. Usually the cut is too small to *notice*—and the bruised one is crated with the good. *You* know that *one decaying orange may spoil an entire crate*—you lose just that much money. You *won't* bruise fruit if you use

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The blades are specially curved and ground—the points and outer edges are smoothened and rounded to avoid bruising. Handles are shaped to prevent tiring of the hand. Wiss Orange Clippers will give years of service—and are unrestrictedly guaranteed to give satisfaction. *For sale by all dealers.*

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GREEN ORANGES.

By G. Harold Powell, in Circular No. 4, Citrus Protective League.

As the season for the shipment of Navel oranges from California is approaching, it is well that the attention of growers and shippers should be called to Food Inspection Decision No. 133, issued by the United States Department of Agriculture. The decision refers to "the coloring of green citrus fruits," and reads as follows:

"The attention of the Board of Food and Drug Inspection has been directed to the shipment in interstate commerce of green, immature citrus fruits, particularly oranges, which have been artificially colored by holding in a warm, moist atmosphere for a short period of time after removal from the tree. Evidence is adduced showing that such oranges do not change in sugar or acid content after removal from the tree. Evidence further shows that the same oranges remaining on the tree increase markedly in sugar content and decrease in acid content. Further, there is evidence to show that the consumption of such immature oranges, especially by children, is apt to be attended by serious disturbances of the digestive system."

"Under the Food and Drugs Act of June 30, 1906, an article of food is adulterated 'if it be mixed, colored, powdered, coated or stained in a manner whereby damage or inferiority is concealed.' It is the opinion of the Board that oranges treated as mentioned above are colored in a manner whereby inferiority is concealed, and are, therefore, adulterated."

"The Board recognizes the fact that certain varieties of oranges attain maturity as to size, sweetness and acidity before the color changes from green to yellow, and this decision is not intended to interfere with the marketing of such oranges."

It is the evident intention of the government to make it unlawful to ship into interstate commerce green oranges that are unfit to eat but which are colored by sweating to give them an appearance of ripeness.

GREEN MANURING.

By Gerald Geraldson.

I should like to make a few comments touching the matter of "green manuring," discussed in your issue of August 31.

If I am not very much mistaken, "green manuring," so called, is just a transient fad, which does not do nearly so much in the way of soil building as it is credited with doing, and which will soon be fully demonstrated to be incapable of "holding up" any soil. It will also be found, in my opinion, that whatever benefit does come to a soil from the plowing in of cover crops, in the green state, is due to the limited percentage of matured or nearly matured vegetation contained, and not due to the green, soft part of the crop to any practical extent.

I have been more or less closely attached to the same piece of California land for nearly forty years, which is much longer than the majority of California orange groves have been planted, and much longer than most of their proprietors have been in the state, and I have had as good, and perhaps better, opportunities to observe "green manuring" and its benefits (?) over a term of years longer than the experience of almost any orange grower or other "green manure" faddist, and my experience has shown quite conclusively that "green manuring" is of no permanent value.

I have started time after time with a newly cleared piece of land, which at first would produce a strong, vigorous crop of green vegetation every spring, which would easily average eighteen or twenty inches high, and have plowed it under year after year, and have worked the ground well otherwise, and have manured it quite liberally into the bargain, and still, invariably, within twenty years the soil would be so depleted of humus that at the end of that time it would not produce a crop of vegetation averaging two inches high. When it had reached this state, as it invariably did within twenty years, fruit trees would cease to make a satisfactory growth, the fruit on them would not "size up," the soil would bake like cement, and water applied to it would run off much as from a cement walk, the soil having but the merest fraction of the water storing capacity that it had had at the start.

Now, these are facts that can be easily substantiated, and they show beyond any doubt that the humus content of the soil observed had fallen off enormously, which would not have been the case had green vegetation been capable of being transmuted into humus anywhere except in the human mind. As I said before, this was not one isolated experiment, but was tried time after time as piece after piece of new land was cleared, and the result was invariably the same. On some thin spots of hillside soil the crisis—that is, the point where the crops fell below the paying point—was reached within ten or twelve years.

Invariably there was plenty of humus and a liberal supply of green vegetation at the start. Had the green stuff plowed into the soil had any soil building qualities of consequence the succeeding crops of vegetation and the vigor of the trees growing on the land would have remained the same or would have increased, but, on the contrary, they both, after the first few years, declined rapidly, just about in proportion as the original supply of humus was worked out of the soil, showing that little if any new humus had been added since we first commenced cultivating, although we had plowed hundreds of tons of green vegetation into the soil.

I am quite confident that by the time they have followed it up for twenty years the present enthusiasts will be content to abandon "green manuring," or to let the crops they plant, or the crops of native vegetation growing on the land, mature before plowing them into the soil.

It all simmers down to this: Soil consists of pulverized rock and humus in varying proportions. Humus comes from cellulose. Cellulose is the solid part of matured vegetation. Nature always uses this formula. Nature knows. Green vegetation is largely water. Water does not make humus, hence "green manuring" does not make humus, but slop.

Agriculture is not possible without a reasonable definite percentage of humus. Civilization is not possible without a system of agriculture which is more than self sustaining. Any system of agriculture which leads to worn out farms is not self sustaining, but, on the contrary, wanton exploitation and waste, which must lead to the bankruptcy both of the individual and the community.

Clean annual cultivation of any soil rapidly wears out, burns out and otherwise dissipates the humus which it contained in its virgin state. Only that system of agriculture which replaces the humus used on a practical basis as it goes along can be permanent. Hauling manure, which is a common way of replacing humus, is not practical in any large way, because there is not enough of it, and because as machinery increases it will decrease.

To be practical a humus supply must, in the first place, really provide humus. Then it must be applicable to all soil, not merely to a small percentage of it; it must be along natural lines; must tend to conserve the soil already formed, not to dissipate it; must not involve overmuch labor, and must increase rather than decrease as time goes on, for as we become civilized our population will increase very rapidly, and our food supply must increase with it.

Only one plan has appeared so far that does conform to this standard, and that is simply to obey a well established natural law which reads about as follows:

"To secure a permanently increasing output from any soil, one-half of the annual crop of natural vegetation must be returned to it, fully matured,

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Through recent investigation it has been proven that a considerable amount of low grade sodium cyanide is on the market. It is probable that some concerted action may be taken by the growers to protect themselves in the purchase of this inferior quality. Analysis by local chemists shows some of the cyanide to contain as high as 15% Sodium Chloride.

Prof. R. S. Woglum contends that a fumigation cyanide containing in excess of one per cent of sodium chloride is unfit for use.

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The Roessler & Hasslacher Chemical Company's Guaranteed Cyanide of Potassium (98-99 per cent) and High Test (128-130 per cent) Cyanide of Sodium are manufactured expressly for fumigating and contain no reactionary chemicals. The manufacturers of this material have studied the requirements necessary to produce definite and dependable results.

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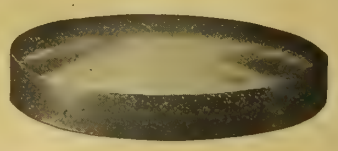

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by means of biennial cultivation or moderate pasturing."

I have followed this plan now for ten years, and have found that it, and it alone, "does the trick." I took the land described above when it had reached its worst—a two inch crop of grass, etc.—and in the ten years I have brought it back to almost virgin conditions of humus content, water storing capacity, vigor of trees growing thereon, and volume of crop produced thereon.

Applying this plan to general farming requires the working of alternate tracts on alternate years; applying it to orchard or vineyard culture requires the working of alternate "middles" on alternate years, which is the plan we have followed from the start of the new regime ten years ago. On the "middles" not plowed we have allowed all of the natural vegetation to mature, not pasturing off any of consequence, and have plowed it into the soil the following spring.

When a soil is never plowed, nature produces at her primitive level of efficiency. When a soil is clean cultivated annually, it is robbed by what is really excessive use or exploitation, as well as by the wearing out and dissipation of invaluable humus accumulated through a long period of time, and it is prevented from replacing any of the humus, a double loss. When a soil is cultivated biennially, nature is really assisted; first, by the conservation of the humus already stored up; second, by the reduction of mechanical wear and exposure to wind and sun one half; and, third, by the addition each year of an amount of matured vegetation, cellulose, more than sufficient to replace the amount used up by the crops produced on the cultivated half during the same year, or on this piece during the previous year, a double gain.

One writer in your "green manuring number" says that farmers who have plowed stubble into the soil have found it a distinct detriment to the succeeding crop, because the stubble did not rot soon enough. Most likely his neighbors laughed at him, and doubtless the professors warned him against the dangers of breaking away from the beaten path. Then, doubtless, he plowed it under the spring after he had harvested the crop, and tried to raise another crop immediately, which is like trying to make the hired man work both day and night, and which does not at all conform to the law I have outlined. But, in the face of all this, if he had persisted his soil would certainly be much more productive today than it is. True, matured straw requires some time in which to decompose, because there is some reasonable amount of substance, cellulose, to it, and cellulose makes humus, see? Biennial cultivation always leads to a crop of matured native vegetation which is finer and probably has other advantages.

This same writer glories in the quick rotting qualities of "green manure," but this is its damning indictment. It rots quickly because there is nothing of consequence to it but water, except as it is matured. He also says that "in our California soils sourness is not feared," and "so far no one has made the land sour in California with green manure." If sourness is not feared it is because of ignorance. We invariably made our soil sour as long as we had any green grass of consequence to plow into it, and so has anyone else similarly situated. The only place where this is not so is where the soil is so porous as to permit of the evaporation of the acids formed before they can accumulate.

The warning sounded against plowing a mass of dried vegetation, leaves, etc., into the ground, and against letting a cover crop get too old, lest it "act as a detriment to the soil," is about on a par with the action of that other California farmer who hauls what little stable manure he has out on to a vacant lot and burns it, lest "it poison the land." This law applies just as well to pasturage as to cultivated land. Its insane violation has led to the present low output of our stock ranges just as directly as to the present condition of our grain fields.

A good covering of grass shades the soil, prevents wash, conserves the rainfall, enabling seed to sprout much earlier than on bare ground and sheltering the young grass to such an extent that it gets a very much better start than that struggling along in the open, exposed to wash, to heat, to wind and to cold. These advantages are obvious to stock men, and they apply equally well in the orchard or on the farm.

On land cultivated biennially the crop of native vegetation will increase very rapidly. Whereas ten years ago our crop averaged about two inches, now it will average over two feet high, and thick in proportion. Through the large amount in the soil and that standing (which is generally laid out across the flow of the water) wash has been eliminated, although our land is all hilly.

Another thing: it is a fact that soil benefits from lying still every second year. This is a necessary rest, analogous to the sleep of the hired man, or any other animal. Earth worms have a chance to work through it and to multiply, and there are other factors at work about which we do not know much as yet.

Again, biennial cultivation makes conditions right for bugs, ants and other forms of animal life, and they thrive immensely, to the great advantage of both land and landlord. I think that pests can be held in check much more readily under this system than under clean cultivation, because there is home and opportunity for their natural enemies.

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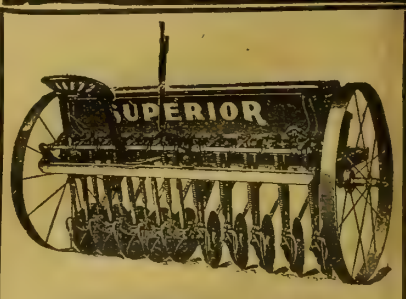

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Deciduous Fruit Culture

APPLES FOR SHOW PURPOSES.

By R. S. Herrick, Colorado Agricultural College.

The demand for better fruit on the part of the consumer is increasing, and, on account of this, competition between the different fruit growing sections is quite keen.

This competition is not only found in the different fruit markets, but is shown at our fairs and apple shows. The people in every apple growing section like to see their fruit win the highest recommendation and approval wherever it is found on the market or on exhibition.

The lack of knowledge in selecting fruit on the part of the apple grower is often the reason why the best representative specimens are left, while some overgrown, poorly colored ones are expected to win the premiums. For this reason it would be well for every orchardist to study the different points upon which apples are scored and judged.

The following score card for plate exhibits is one that will be used at the American Apple Exposition, Denver, Colorado, November 12-18, 1911.

For perfection .....100 points
Size (normal)..... 10 points

It will be noticed that size counts for but one-tenth of the points given for all requirements. The apples should be of good size, but not overgrown for the varieties. It is much better to have five apples of medium, uniform size than it is to have them of different sizes, even though part of them are large.

Uniformity and trueness to type .....25 points

These two conditions are very important ones and should receive special attention.

The five apples should be so uniform in size that they resemble so many peas in a pod; one should compare one apple with another and see if they are exactly alike in form and size.

A pair of measuring compasses will facilitate matters in securing uniformity of size.

In selecting for trueness to type, one should know what the correct type is for variety. Look over carefully the different trees of the same variety and fix in mind the prevailing type.

Color .....25 points

The color should be the best obtainable for the variety. Do not rub or polish the apples, as this destroys the natural bloom, and many judges will disqualify apples when thus treated.

Texture and flavor.....20 points

The time of picking, care and manner of handling have much to do with texture. If the apples have to be kept for any length of time they should be picked when they reach maturity and stored where a uniform temperature of thirty-four degrees can be obtained.

With the proper management of the orchard as regards pruning, thinning, spraying, irrigation and cultivation, much good can be obtained in securing better texture and flavor of the apples.

Freedom from blemish.....20 points

This means that the apples should be free from all worm holes or bites, frost and hail marks, limb bruises, spray burns, etc. The stems and calyxes must be intact, and they should be of the correct size and length for the variety.

Be very careful in picking and packing not to bruise nor unnecessarily to rub the specimens, as this may have much to do with determining the decisions.

WHEN TO PICK APPLES.

Mr. U. T. Cox, one of the best apple growers of Ohio, said as to the best time for picking the fruit, before the Maryland Horticultural Society:

"Let apples hang on the trees just about as long as they will hang there without getting mellow. When an apple ceases to grow it takes on a better quality. It has been proved that that apple will keep longer than one which is packed before it matures. That is what we want. We have been making two pickings on the trees as a general thing and sometimes as many as three pickings. It will pay to pick over your apple trees twice, because you can go in that orchard and find some riper than others. Some varieties ripen more evenly than others. It will pay to pick only the ripe apples and leave the green ones on the trees, and let them grow ten days or two weeks. Apples ripen sooner than others on the same tree. We go over them and pick off the ripest and largest and leave all the little green ones on the tree. Then when we come to pick them we find apples there almost as good as the first picking.—Ex.

GROWING PEACH SEEDLINGS IN NEW YORK.

To grow a peach seedling requires a great amount of careful attention in getting the pits, having them germinate, and getting them to grow big enough to be budded the same year that the seed is planted. Northern nurserymen experience more difficulty than the southern growers, but this work has to be done in the North to get trees adapted to the climate. It is the common experience of nurserymen that peach pits taken from budded varieties will not do so well as the natural pits that are gathered in the mountains of Tennessee and North Carolina. If these natural pits could be had elsewhere, they would undoubtedly be just as good, but there is where they grow in quantities large enough to supply the demands of northern nurserymen. They are gathered in small lots by the country people there, and sold at the local store. From there they get into the hands of seed companies and nursery firms of the South, who sell them in large lots to northern nurserymen at prices ranging from $1 to $3 per bushel. These natural peach seeds are small in comparison with the pit of a budded peach. They send up a strong thrifty seedling, and a bud inserted from the scion of any standard variety of peach will live and do well on them, while on the other hand, if you take, for instance, a Crawford peach pit for this purpose, it will not do as well, the bud will not be so apt to live in it, and the young tree is more subject to peach diseases. For these reasons nurserymen do not find it profitable to use any other than the natural southern grown peach pits.

There are several ways employed by nurserymen in planting the seed. Some sow them in the fall in rows 3½ feet apart and about two inches apart in the row. They are covered to a depth of about three inches and

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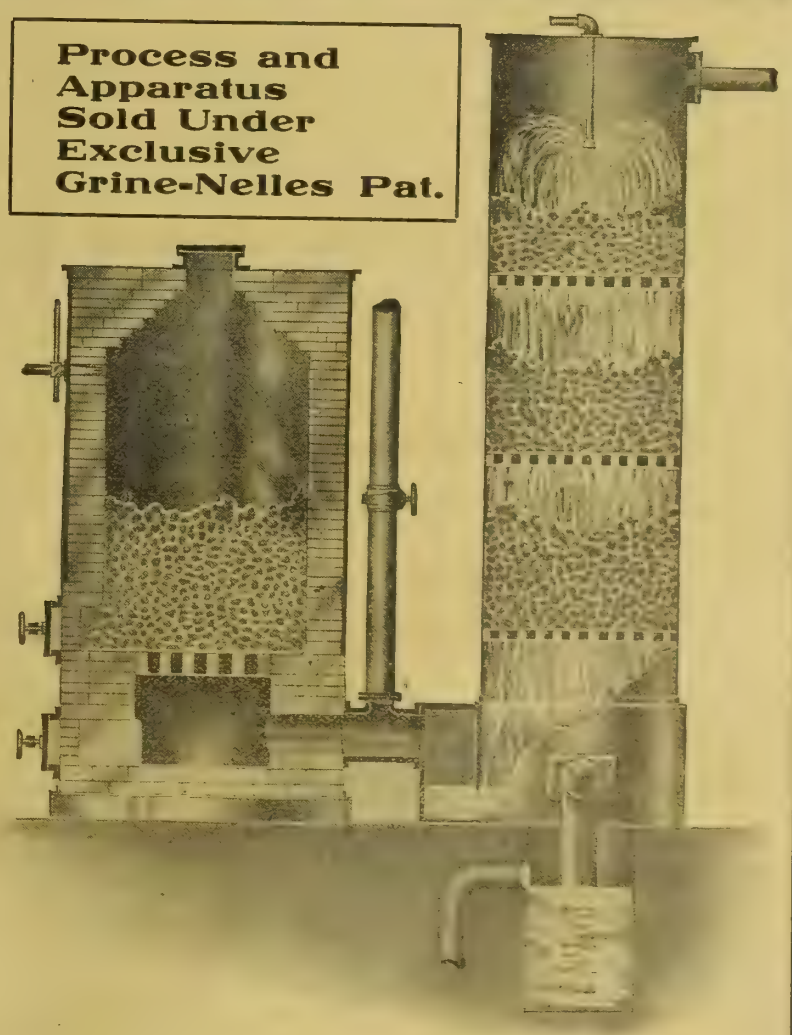

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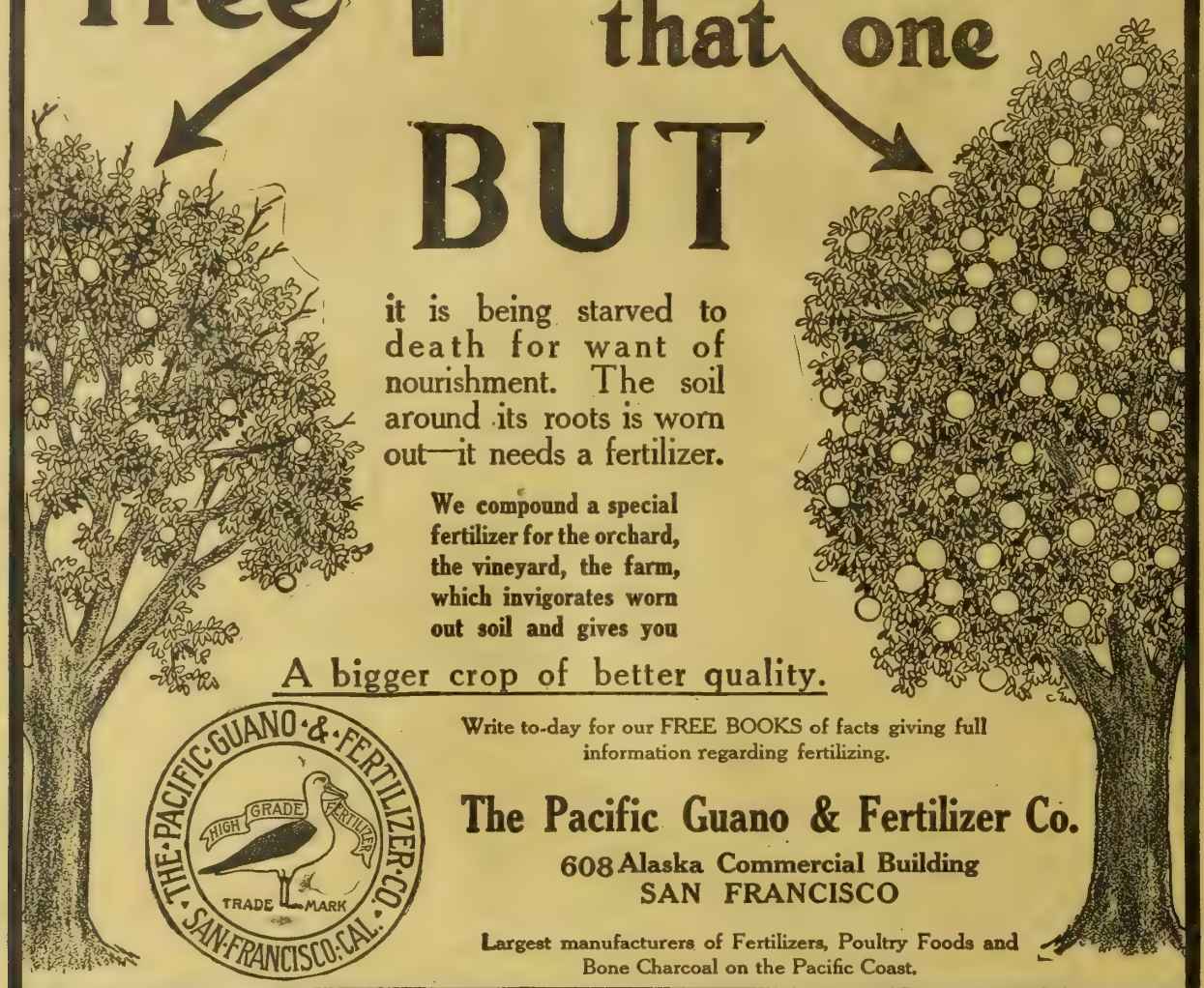

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50,000 feet	2-inch	Standard, at	8½c per foot
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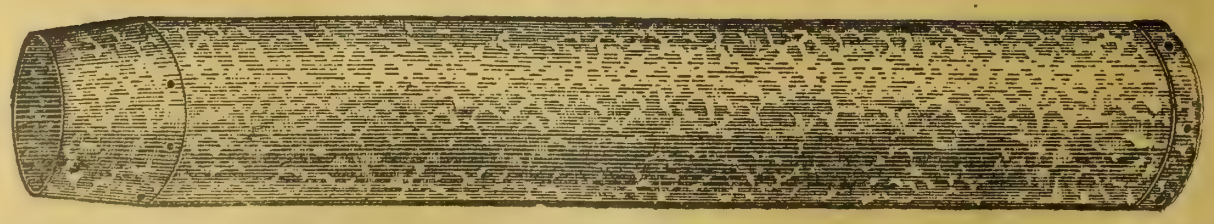

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some of this raked off in the spring when they are about to peep through. This method is attended with considerable risk. Often only half the pits germinate, sometimes none at all and the whole planting has to be plowed up. The Genesee Valley has a fine silt loam that remains quite wet in places during the winter, and nurserymen there sometimes have remarkable success with this method. Like fall planting of trees, the seeds germinate and start to grow very early, and make a better growth than those planted in the spring.

The custom most commonly followed is to put the pits in sand in the fall and wet them down well. A trench is made for them right out in the open. They should not be buried too deep, as they need to have the frost get at them during the winter. It is claimed that the frost cracks them open. Nurserymen buy a large number of pits and treat them in this way. They leave them in this trench for two or more years, going over them several times each spring and picking the meats out of the pits that have cracked open.

Cracking them open with a hammer or a peach cracker and then sowing the meats does not prove successful. The seedlings are weak, and anly a small percentage of the meats grow at all. Peach meats should be planted about one-half inch deep and not until the ground has warmed up. They are very delicate, and it takes them a long time to get above ground. When they do come up they should be kept free from weeds and well cultivated until they get a start. We do not as yet half appreciate the value, as a disease preventive both for then and for later on, in maintaining a steady, thrifty growth in a young plant. After they get well started the work on them up to September is comparatively easy. First of all the soil must be of the sandy loam type and extremely fertile. The young seedlings must have careful and frequent cultivation during the hot, dry summer months, so as to keep up a vigorous growth until they are ready to be budded in the early part of September.—Rural New Yorker.

PRUNING OF APPLE TREES.

Some pruning of apple trees is necessary to give them a good form, but should be avoided as much as possible. By attending to this work early in the life of the trees heavy pruning may be entirely avoided. If large branches must be cut off they should be removed in the latter part of winter or early in spring, before sap starts, and the wounds covered at once. For light pruning, early in June is an excellent time.

When wounds are made on trees by pruning or in other ways, probably the best material to cover them with is grafting wax. In the absence of this, white lead will be found a good substitute. Where there is a considerable wound, as where the bark is stripped off by mice, it is a good plan to cover with grafting wax or white lead and then wrap with burlap. Where this injury is close to the ground, in addition to putting on grafting wax, it is a good plan to cover the surface with soil.

The "See America First" slogan is being renewed, and now the automobile people are looking up a best road from the Atlantic to the Pacific, one northern and one southern road. A member of the Touring Club of America is now on his way from New York to Los Angeles and San Francisco. He will come by one road and return by another, and it is expected he will outline the best road on which to "See America First."

If the governor of California appoints a "clean-up" day it should be heartily entered into by every community. In fact, we know it will be well for every day to be a clean-up day and the entire state should put itself in shape for exhibition in 1915. It will take four years' practice to qualify for that one year.

In addition to the humus added to the soil by green manuring, the mechanical effect of the roots is most desirable because of opening up passage ways through which the air passes, also the chemical effect of root fluids upon the soil releases any of the

SPECIAL FLOWER SEED COLLECTION

WE will mail you a package of FLOWER SEEDS containing a dozen or more old-fashioned hardy Annuals, such as PHLOX, POPPIES, CANDYTUFT, MARIGOLD, COSMOS, MIGNONETTE, Etc.

You can sow this package of choice seeds in out-of-the-way corners of the garden, in odd beds around young trees or on embankments and with little cultivation you will have a mass of gorgeous and continuous blooms, sweetly fragrant, all through summer, till killed by frost.

This package will be sent to any address for 10c. in stamps or coin. Write Dept. A

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The Ornamental Garden

THIS MONTH.

By O. M. Morris.

Of course the big interest now in the flower garden is planting Dutch or winter flowering bulbs. These are all mostly at hand now, and the sooner they go in the ground the better average yield of flowers one gets. Larger quantities of bulbs were received this year than ever before, and the supply is growing low already. Many varieties are clean up. Among the most popular selling bulbs this year are Spanish iris, ranunculus, anemones and daffodils—all are quite hardy and easily grown. The May flowering tulips are also becoming quite profitable and our florists are planting quantities for their cut-flower trade. Unfortunately the early tulips are almost a failure in this climate. But the late flowering are even finer, having longer stems and one is well paid to wait a little longer for the flowers. Every one should try a few of these May flowering varieties.

Too much praise cannot be given to the Spanish iris, they are of the easiest culture—hardy and fine for beds or as a cut flower. They can be had in separate colors, yellow, blue, white and bronze.

A fine bed of prize ranunculus and anemones are unsurpassed. They last in bloom a long time, are hardy and the colorings are grand.

The lovely carnation is gradually giving way on the Los Angeles market to the rose and bulbous flowers. Less quantities are being sold each year, although the quantity is far superior to those of a few years ago. The great quantities that have been put on the market we believe has been the cause of making the flower "common" and people, like fashions, change in their likes, and they are looking for the "novelty" in flowers or something a little out of the ordinary.

Some good flowers to grow for their special purposes are as follows. These lists embrace but a few of many adapted for their particular uses.

Dwarf Plants for Edging

Armeria or thrift, pyrethrum aureum, santolina, dwarf alyssum, dwarf candytuft, Chinese dwarf delphiniums, dwarf varieties of godetias, Festuca glauca, vittadinia. For shady borders a pretty edging is made of Primula veris, and cinerarias.

White Leaved Plants.

Glaucum or horned poppy, Centaurea candidisima, cineraria, maritima.

Tall Foliage Plants.

Elephants ears, cannas, castor oil beans, colocasias, aralias, eremurus, gunnera, malvas, etc. In shade hydrangeas are fine.

Annual Flowers for Brilliant Show.

Asters, Antirrhinum balsams, dianthus, petunias, phlox, portulaca, salpiglossis, stocks, zinnias, pansies, marigolds, and others in great variety.

Annual Flowers for Shady Places.

Annuals, or those treated as annuals are migonette, pansy, violas, forgetmenots, primulas, mimulus, lobelias, impatiens, daisies, begonias, Clarkia, cinerarias, etc.

Flowers for Wild Garden.

Coreopsis, delphinium (annual), calendula, annual chrysanthemums, cosmos, gypsophila, gaillardias, gilia, poppies, godetias, leptosyne, linaria, linums, lupins, nemophila, nicotina, petunias, marigolds, zinnias. The above could be selected as to height, planting tall in background and tapered down to the dwarf in front.

Small Fruits and Vegetables

THIS MONTH.

By O. M. Morris.

Much of the planting has been done for fall and winter gardens by this time, but it is not too late to plant most all of the hardy things, such as peas, carrots, turnips, cabbage, lettuce, beets, cauliflower, endive, kohlrabi, etc. Beans, hardy varieties as Canadian Wonders, are being planted yet or up to the 10th or 15th of this month. Plantings are sometimes cut down by frost, but very seldom before about Christmas time, and it well repays one to risk it, for during the holiday season they are worth from ten to fifteen cents a pound on the market.

Cabbage and cauliflower are being planted from seed bed now for spring crop. They are hardy and can be planted any time for succession. The big plantings being made now are for spring shipments East. Lettuce, carrots, turnips and beets are planted at any season for succession.

There is reported a great scarcity of all root crop seed this season. Beet seed is soaring high, as is carrot, turnip and spinach. There will be a marked increase in price of these seeds this season on account of shortage, some growers meeting almost complete failure. Cabbage is also on the same list as there is only 30 to 40 per cent of a seed crop, and we would warn all against cheap offers in these seeds.

While speaking of short crops, the potato situation in the East has not changed much in regard to prices. The market ranges from $1.05 to $1.75 per bushel for prime stock. This will make spring potatoes a good price on California market, as but few eastern stock can be brought in, and Idaho, Oregon and Utah will make prices according to eastern prices. On the other hand, the California bean crop will be a record one if weather is favorable during harvest, but prices are very firm.

The last of this month and first part of November will be the time to plant lettuce for northern shipping or holiday and early winter market. Large quantities are shipped from Los Angeles during winter. It takes 2½ to 3 months to make the crop. The varieties mostly used are New York (Special Los Angeles market strain) and Wonderful—both do well.

STRIPED CUCUMBER BEETLE AND THE TRUE SQUASH BUG.

The first of these, a biting insect, and the second, a sucking insect, attack melons, cucumbers and squashes; and they are often confounded, both being called "squash-bugs." This is unfortunate, because they call for radically different treatment. We would suggest planting an excess of seed; for the first named insect, dusting plants with one pound of Paris green mixed with fifty pounds of lime or cheap flour. The beetle can be to a certain extent driven away by air-slaked lime alone, dusting it liberally on and about the plants in each hill. For the true squash-bug we would recommend hand-picking of bugs in the early morning, also hand-picking of the large yellow eggs. Destroy all vines after harvesting crop. Plants can be kept covered with light frames of cheese-cloth while small.

Do not plant cucumbers in poorly prepared ground. Make low, flat hills from four to six feet apart, each hill two or three feet across and thoroughly pulverized sixteen to eighteen inches dep. Put a shovelful of well-rotted manure in each hill.

The wheel hoe saves backache and does the work of three hoes.

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Our buds and grafts are all secured from the finest quality bearing trees, insuring all stock we sent out being "True to Name." Our trees are grown under our personal supervision, carefully dug and packed for shipment in "A-1" shape.

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For 26 years I have furnished my customers with trees and seeds direct, without any middleman, at less than half the agents' price. Freight paid on $10.00 tree orders.

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GERMAN NURSERIES AND SEED HOUSE

(Carl Sonderegger) Beatrice, Neb.

BUSH and BOG PLOW

Clark's Reversible Bush and Bog Plow is just the tool to subdue baked soil, bogs or newly cleared forests or stumpland. Cuts a track 5 ft. wide, 9 in. deep. Has eight 24-inch cutlery steel disks. Turns the earth to or from stumps. Will kill any bush or plant that grows and leave land true and clear. Send for new book, "Intensive Cultivation." It's Free.

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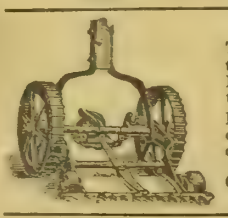

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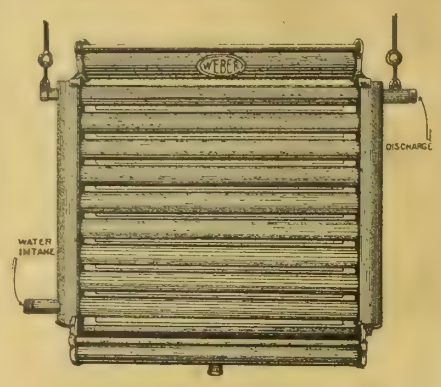

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You can balance your ration with appetizing, succulent Steam-Dried Beet Pulp—cheaper and better than any mill feed or grain, it makes an ideal combination with alfalfa hay—cows relish it keenly, and thrive on it splendidly. It can be used in the ration to replace an equal amount of mill feed or grain, or to replace *one and a half* times the amount of alfalfa hay.

It is the milk-producing qualities of Steam-Dried Beet Pulp which have made it famous. 8 lbs. daily, fed with 15 to 20 lbs. of alfalfa hay, forms a properly balanced ration for a thousand-pound-cow, giving about 30 lbs. of milk daily. You can safely figure on this ration to give you one to two quarts more milk every day from each cow—that means 3 to 6 cents every day from each cow. It's easy money, that you can get without the least trouble or risk.

It is also a splendid green feed for poultry. They are extremely fond of it.

Be Sure It's Steam-Dried

Steam-Dried Beet Pulp is the beets of the sugar factory with only the sugar extracted—and then *dried by steam.* The wet beet pulp has long been favorably known for its feeding qualities, but it is inconvenient, costly and objectionable to handle. When the beet pulp is *steam dried* it is packed in 100-lb sacks, and will keep for an indefinite time without spoiling. Steam-Dried Beet Pulp is always uniform in color and quality, never burnt or blackened by smoke, always clean and pure. Ask your dealer about it—or write us.

STEAM-DRIED BEET PULP
Just Like Roots
Makes More Milk

THE LARROWE MILLING COMPANY,
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Live Stock and Dairy

Dairymen and stockmen are requested to write of their experience. Mrs. Sherman is always willing to answer queries and this, with experience of other workers, will make this department of greater value.

DRAFT HORSES.

By Mrs. M. E. Sherman.

The average farmer is more interested in the draft horse, especially as that gives him a good heavy draft colt that will sell on its merits as a puller, without expensive training required by the trotting or running horse. The English and German people have good draft animals, but have sent very few to us compared to the number sent from France. The English have the Clydes, the Shires and the Suffolks. All are good, the Clydes and Shires are frequently seen but the Suffolks are very rare even at the larger fairs. All three of these breeds nick kindly on the native mares. The grades of Clydes are frequently seen on the streets of Chicago and New York, but rarely in San Francisco.

The Belgian and German drafters are handsome bay or brown animals of good bone and substance, but are unfortunately rarely found in California. The French have been successful horse breeders and have pushed their horses all over the known world. In this country we are apt to think of all these horses as Percherons, while in truth there are other strains that should not be called Percherons. It is doubtful if the earlier importations can ever be separated in individual stud books. The probable course that will be pursued is to form new books taking the different animals as they arrive in this country and having them registered in the proper way. The present Percheron Society has made enemies by refusing animals that were not properly recorded or properly bred. Many have failed to understand that a stallion may be a good one and may have a proper record and yet not belong on the books of a given Society.

Different Strains.

The most powerful of all the French drafters are the Mulassieres raised in the central provinces of Duex-Sevres. These are ponderous animals with heavy bones in rather coarse legs having heavy feathering. They come from the same country, but in no way suggest the dainty china of Sevres. The Mulassiere are not in use to any extent as work animals, the mares are used as breeders for large mules. Some of the largest of these hybrids come from this cross.

The Nivernais are becoming common in California, selling as Percherons. They are handsome, upstanding blacks a little smaller and shorter in the back than the regular Percheron. The knights of old covered with armor rode the ancestors of these horses in their joustings. The Nivernais produce good colts and have the black coloring well carried to their offspring.

The Ardenais is another French breed that runs to bays and browns. These may be called big little horses as they have a heavy short body swung low to the ground. The Boulonnais is another strain that is sold as a Percheron. These have coarser bone, heavier, larger heads, are more chunky and have shorter necks. In character and disposition are like the Percheron coming in color both gray and black.

Percherons.

These are the best known and the most desired of the various French horses. They are the kindest creatures possible and the aged stallions are safe as work animals on the farm. The geldings are liked in the city, as they are rapid, smooth walkers, swinging along at five miles an hour all day long, drawing easily a load with spirit. In California we have probably three Percheron sires to one of every other breed of draft stock.

A Typical Sire.

In buying a sire of any draft breed the size of the bone and frame as well as its soundness must be considered. The animals seen at shows and offered for sale are often loaded down with fat until there is three or four hundred pounds too much weight. This weight is often paid for at a high price, for a ton stallion, selling for two thousand dollars, makes horse flesh worth a dollar a pound. In a horse, bone and muscle may be worth a dollar or two dollars a pound, but extra soap grease is dear at that price. As five pounds of barley and bran make one pound of flesh it is selling the barley at even a wilder price than the feed men are asking us today.

Grade Stallions.

At last the state has awakened to the fact that many people were being imposed of by unprincipled men, and we have a good law that now makes it necessary to record the horse and have his state license that properly calls him a grade if he is a grade or a full blood if he is a full blood. The Percheron Society of America has gathered the horse statistics of Illinois, Wisconsin, Kansas, North Dakota, Minnesota, Montana, Iowa and Utah that are interesting. In these states the grade stallions in use run from 26.4 per cent in Utah to 66.6 per cent in Pennsylvania. In Iowa no grades are licensed and therefore no list could be secured. In the other eight states mentioned 48 per cent of the stallions were grades. This represents a heavy loss to the farmers, for rarely will a grade stallion produce animals as good as himself. The reason is this, the man who raised him found as a colt he was an individual of outstanding merit and therefore kept him. Now he has no backing behind that to secure his passing merit on. As a rule even the pure bred sire will not produce more than seventy-five per cent of colts as good as himself. In purebred stock the breeder has one every now and then that he does not keep for breeding purposes, so the stallion represents not only pedigree but constant selection of the best of his strains.

The average of the states mentioned above was one pure bred sire to every five hundred horses. While one pure bred sire to every two hundred would be nearer a right proportion in a horse breeding district. The same statistics may be accused of being favorable when they say that 68 per cent of the registered drafts are Percheons, I give that for what it is worth.

Care of the Horse.

The way in which horses are often gorged during the breeding season and

(Continued on Page 333.)

Geo. A. Smith's Jersey Heifers

With First Calf Make High Yearly Records

Lady Letty Lambert, 124201

Sold for **$3600,** and produced **56 lbs. of milk** in one day, **1521 lbs.** in one month, **14263 lbs. in one year, 38269 lbs.** in 3 years; **24 lbs. 12 oz.** of butter in 7 days, **1081 lbs.** in 357 days, **2913 lbs.** in three years, and **three living calves.** 32 of her granddaughters and grandsons will be sold in the Geo. A. Smith Second Annual Sale.

In my former advertisements, I have shown what the ancestors of my Jerseys have done. Some of them have been **World's Champions and have produced over 1000 lbs. of butter in one year.** Now I am able to show what their descendants are doing **with FIRST CALF on Year's Official Authenticated Test.** The records of some of these heifers are **greater than the records of some of their ancestors with first calf,** who at maturity produced **OVER 1000 LBS. OF BUTTER IN ONE YEAR.** The following is a list of **JERSEY HEIFERS WITH FIRST CALF,** which have qualified for the **Register of Merit** under the rules of the **American Jersey Cattle Club** governing year's official authenticated tests:

Victor's Lady Queen	496	lbs. butter in one year
Marquis Pogis Violet	491	" " " "
Pedro's Marigold Queenie	488	" " " "
Cretesia Melia Gonda	478	" " " "
Victor's Francis	467	" " " "
Victor's Lady Rose	453	" " " "
Anna Burner	453	" " " "
Victor's Susie	452	" " " "
Victor's Lady Kate	437	" " " "
Cretesia Melia Flossie	436	" " " "
Loretta Smith	432	" " " "
Average for the eleven is	462	" " " "

The above tests were conducted under the supervision of the State University and the American Jersey Cattle Club. **There is no guess-work about these facts.** There is a great difference between knowing and guessing. These heifers have only received ordinary herd care and feed and have not been crowded to the limit. **What will they do when they reach maturity?** Some may make **over 1000 lbs. of butter** each in one year, as some of their ancestors have done.

In addition to the above **there are now 33 cows and heifers undergoing Year's Official Authenticated Tests** and are **making high records.** Some of these heifers and others equally as good will be sold in the

GEO. A. SMITH

Corcoran, California

Second Annual Sale, Tuesday, October 17, 1911

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Thursday, Oct. 5, 1911

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WALNUT PRICES.

At the meeting of the Southern California Walnut Growers Association in Los Angeles last Saturday, fullest discussion was had as to this year's crop and prices. It was conceded that the crop will be large, but at the same time that the European crop will be small. Many were in favor of the recommendation of a 15 cent price for No. 1 soft shells; others desired a lower price and the earlier disposal of the output. A compromise was finally effected in the recommendation of 14 cents for No. 1, 13½ cents for No. 1 hard shells, and 11 cents for No. 2's of both kinds.

SAVE THE BIRDS.

The Bureau of Biological Survey is taking a hand in the effort to save the white heron or egrets which produce the "aigrettes" so much prized by the ladies as hat ornaments. The state of New York has enacted laws making it a misdemeanor to sell these feathers, but in most other states they are still sold. The Biological Survey has established breeding centers in the southern part of the United States and it is believed that in time will preserve this peculiar and beautiful bird from extinction, but there are portions of the United States in which the bird is entirely extinct. The work of wiping out this beautiful bird has been more rapid because of the fact that the feathers are at their greatest beauty during breeding season, and to secure the feathers at this time it has meant the loss of the mother bird's life and of her young as well.

IGNORANCE.

An inquirer requesting information through the query department of the Cultivator did not wish to make known the name, "because human nature just cannot endure to expose its ignorance to a stranger." "I never yet saw or knew of a man who wanted anyone to know he was not posted. It is a very good sort of pride we are endowed with, although it often stands in the way of advancement." The last phrase is especially true, and until we are willing to confess our ignorance on thousands of topics we will never advance. The person who secures so much information in the vast range of this world's knowledge that they have no occasion to ask for further would be an anomaly indeed. The best way to increase our knowledge is to get the best information possible and then confess up to our lack and seek for further light.

DOLLAR DOWN, $1 A WEEK.

Central California exchanges note the formation of a new farming organization which looks a trifle as if it might be floating around on hot air. According to the exchanges, the idea is for wage earners, or anyone else who happens to have a stray dollar, to pay one or more dollars per week into the till of the company, for which an interest will be acquired in the organization, which is to take up the breeding of hogs. "For the first dollar it is represented that the investor will acquire title to a hog, the succeeding dollars for the next ninety-nine weeks going to support her and her offspring." The company then reserves the right to purchase the hog family at the end of the hundred weeks for the sum of "$150.00." The prospectus says, "Hogs are a necessity," and of course claims great profits from the method which is to be pursued. The hogs may be profitable to the investor. It is of course possible that "lambs" will be profitable to the organization.

BETTER FARMS

Many of our readers may recall that nearly a year ago the Cultivator published a story of a pure-bred Holstein cow which was given as a prize for the best kept farm on the lands under the ditches of the Sacramento Valley Irrigation Co. in Glenn and Colusa Counties. The story of the winning of the prize was very interesting, and so beneficial to the farmers and to the company that a marked extension of the prize offers is made this year. In fact instead of one prize being offered, eleven are now offered.

This company has holdings in these two counties covering about 125,000 acres of land. Water has been piped and the lands are being sold off, and as an aid to those purchasing these lands an agricultural department has been organized and its director is Mr. W. S. Guilford. His advice is freely given to all who ask it and under his recommendation these prizes are offered as additional inducement to better kept farms. The eleven prizes are divided up, three going to the best general farm. These are first, second and third, respectively,—registered Holstein-Friesian cow, 3 registered hogs and 25 pure-bred chickens. The next two prizes are for the best farm first year development. A Jersey heifer and pair of registered pigs are to be the winnings. The next two to the best first year orchard. $25.00 and $15.00 worth of nursery stock go in this class. The best first year stand of alfalfa calls for a mower and a rake for first and second prizes. The best preparatory work for alfalfa five acres or more, calls for 100 pounds of alfalfa seed and a Fresno scraper.

Two judges have been selected,—Prof. E. J. Wickson, Dean of the College of Agriculture, and C. B. Messenger of the Cultivator.

GREEN ORANGES.

What is a green orange? This question is being asked in all seriousness by many Californians raising oranges in the early orange districts, as well as by orange growers in Florida. Dr. Wiley has made a ruling that "immature oranges artificially colored by sweating will be considered adulterated." Now, what Dr. Wiley considers an immature orange no one seems to know. When does it pass the stage of greenness to one of ripeness? Is there any percentage of sugar required in a ripe orange? If so, Dr. Wiley has never informed us, and therein lies the injustice of his decision. It should be very easy for him to give orange growers some information which would enable them to know when they may ship their fruit to market without danger of confiscation. Dr. Wiley's dried fruit decision was sprung at a time when it did almost incalculable injury to the dried fruit industry. In fact there were thousands of dollars taken from the pockets of the dried fruit producers. Only recently we noticed another decision affecting green teas and other colored teas. Millions of pounds were in port and on the sea coming to America, the shippers of which knew nothing of any such ruling until it was announced. While we may have no particular love for the Chinaman who is producing chemically colored teas for our consumption, it was manifestly unjust, after the many years of acceptance of the same colored teas in our markets, to shut them off without warning. During the recent attack by the food and drugs trust on Dr. Wiley and the effort to oust him from office the sympathies of almost the entire country were with him, but it is greatly to be regretted that he has no sense of justice in his manner of dealing with these questions. He certainly can give to orange growers something more definite than he has yet given as to what constitutes green and ripe oranges.

LEAKAGE METER.

One of the factors which have entered into fumigation and made most effective work uncertain has been the matter of tents, or rather the material from which they are made. It has been found by actual tests that the effectiveness has been greatly reduced by the porousness or looseness of the cloth. The percentage of this loss has been merest guesswork, and in fact often has not reached the stage of guesswork, for it has been ignored entirely. Because of this, some trees have been fumigated at considerable expense with but little or no reduction of the scale. The same tents used on a foggy night, however, have proven more effective. For a time it was considered to be due to the moisture in the atmosphere giving more power to the gas than on a dryer night. It is now proven, however, that this was simply the matter of the moisture closing the pores of the cloth and giving almost a gas-tight tent. This matter of leakage finally caused more of less investigation, and it has been partially overcome in smaller trees, which show a far greater proportionate leakage by being given a stronger proportionate dose than the larger ones. But, in the matter of material, the only safe way is some method of testing. Professor C. W. Woodworth, of the State University, has been studying this problem for several years, and he has finally perfected a tent tester, or, as he prefers to call it, a "leakage meter." Regarding this the State Experiment Station will soon issue a bulletin in which will be given tables giving exact dosage of cyanide, acid and water for a tree of particular size and with the particular tent in hand. The tester or meter is very simple, so small as to be slipped in the pocket, and the testing of a tent with it can be done in less time than this short description can be read. It appears that it will be invaluable for field work, and we imagine would be especially valuable in testing material which has been supplied by the dealer, to show whether it comes up to samples submitted or not. With the processes involving so much uncertainty, such an implement will be appreciated as one step towards more exact results.

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Agricultural News Notes of the Pacific Coast

Northern California

Anderson, Shasta County, hopes to have a new creamery.

Twenty-four varieties of rice are being grown in Colusa County.

An artesian well was recently bored at Germantown, Glenn County.

The 16th annual fair of the Ferndale Fair Association was held last week.

A San Francisco Livestock Corporation has leased 590 acres near Healdsburg.

Chinese are building a large fruit drying plant at Dutch Flat Placer County.

Eighty acres of rice have been harvested by the Moulton Irrigated Land Company at Colusa.

Healdsburg wine grape growers are hoping prices for this season will range from $16 to $20.

Water rights have been located and reservoirs will be built on Little Stony Creek in Glenn County.

It is stated that nearly one-half of the entries at the short courses at Davis are from the cities.

Oroville, Butte County, is opening its gates to a large number of colonists on the way from the East.

The State Fish and Game Commission is endeavoring to establish Golden trout on the streams of Mt. Whitney.

An Angora goat raiser at Ft. Bidwell, Modoc County. has found the producing of mohair very profitable.

The Sacramento Valley Irrigation Company will offer more liberal prizes this year than last in its unique better farms contest.

A permanent water supply for certain Yuba County lands is to be secured through a tunnel if permission can be secured from the Government.

The campaign against the saloons which has existed in Davis which has been waged by the University Farm and the better element of Yolo County, has finally won and at midnight Sept. 1st the saloons closed.

Central California

Wine grapes are being shipped from Hughson, Stanislaus County, to Oakland.

A thousand acres of Merced County land is to be cleared and planted entirely to peaches.

The Weather Bureau at Fresno is to give special service to the farmers over the telephone.

The alfalfa acreage of Stanislaus County has been greatly increased during the last year.

The heavy rain of last week did some damage to raisins on trays, and table grapes yet on the vine.

Watsonville Apple Show boosters are securing encouragement from almost every county in the state.

The Stanislaus County Poultry Association is getting down to work and hopes to hold a show this season.

Much damage was done to potatoes and beans by frost in San Joaquin County about the middle of September.

It is claimed that Shima, the Jap potato grower, will clean up half a million dollars on this year's output.

Some new crop raisins have been delivered but it is expected heavy movement will not begin for another week.

Kerman is planning for a big exhibit at the Fresno County Fair and proposes to make the Kerman day, Oct. 5th, the biggest day of the week.

San Joaquin County table grape growers are holding back table grape shipments in the fear of glutting the market and being compelled to pay freight.

The largest shipment of green peppers ever made from the state was that made from Lodi last week when 625 lug boxes, each weighing 60 lbs. was forwarded to Tacoma. Wash.

An eastern horticulturist visiting in Stanislaus County thinks that the San Joaquin Valley will become the nursery of the world in that it will produce vast quantities of seed and nursery stock.

Southern California

The Imperial County Fair will be held at El Centro, Nov. 20-25.

The Imperial County Fair will be held at El Centro, Nov. 20-25.

Potato growers are greatly elated over the high prices of their product.

Buena Park, Los Angeles County, held a harvest home festival last week.

Corona orange packing houses are being overhauled in anticipation of a big output next year.

Imperial County Supervisors declare that excessive irrigation which floods the roadways must be stopped.

Yucaipa Valley is sending out large quantities of fine red apples. The quality of Yucaipa apples is exceptional.

Mendelson, the honey man of Ventura County, reports his output of two cars of honey about 30 per cent of a full crop.

Apricot growers of Ventura County will realize over $600,000 from their crops this year. The output will be about 22,000 tons.

The Los Angeles County Forestry Commission has been granted by the board of supervisors $25,000 for beautifying and planting roadsides.

Bean fields of Los Angeles County near Santa Monica are being reduced in extent every year by the inroads of subdivisions for home building.

A large traction engine was damaged to the extent of a thousand dollars by plunging through a bridge over the Santa Ynez River near Lompoc.

Friends of the Chuckawalla Valley are pleased over the announcement that a bedrock base has been found for the immense concrete dam in Bullhead Canyon.

European foul brood which has existed in some of the apiaries of Central California for some time, has now crossed the Tehachapi and has been found in a few of the apiaries of Los Angeles County.

The Coast

Oregon has 175,000 dairy cows valued at $7,000,000.

Hop pickers at Salem, Ore., have complained because of excessive rains.

A berry grower at Spokane, Wash., is filling an order for plants at Barcelona, Spain.

A wheat grower at Redland, Ore., is jubilant over an average yield of 50 bushels per acre.

North Yakima, Wash., has a cold storage plant which will hold a half mile long trainload of fruit.

The hay harvest at Sumpter, Ore., the biggest ever, in proving remarkably profitable this season.

An Idaho grain grower has a plant from one kernel of wheat carrying 64 straws each with a head of wheat.

Lands near Goldendale, Ore., have been greatly increased in value because of irrigation system just completed.,

The Chamber of Commerce of Pullman, Washington, is endeavoring to secure a more just freight rate to eastern points.

The annual meeting of the Inland Empire Anti-smut Association will discuss eradication of grain smuts at Pullman, Wash., this week.

One of the biggest September rains on record has caused Oregonians to smile. Some hay has been damaged, but great good was secured.

Apple growers of Wenatchee. Wash., are making greater efforts than ever for an attractive pack. Carefulness and taste has proven wonderfully profitable.

Ranchers on the highlands on the east side of the Columbia River below White Bluffs are contemplating an irrigation scheme which will cover 60,000 acres.

The new process of charpitting of stumps on the logged-off lands of Oregon has increased the value of those lands and many of them are being brought under cultivation.

Dutch Bulbs

Our first car of the season has arrived from Holland, and the Hyacinths, Tulips, etc., are of superlative size and quality.
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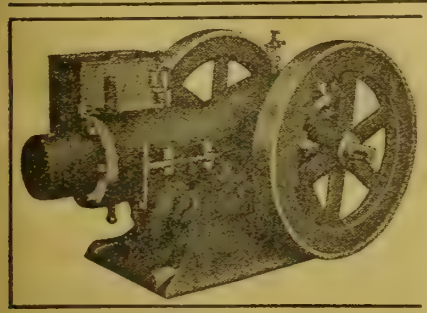

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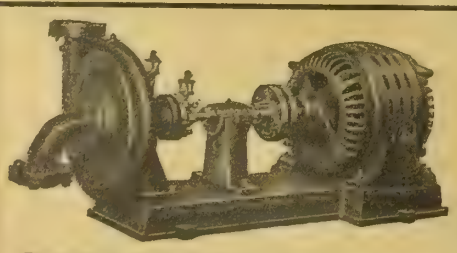

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Profit in the Poultry Yard

Practical poultry people who may have ideas from their experience as to methods of feeding and housing and general care of poultry will confer a favor upon the Cultivator and its circle of readers by sending in concise accounts. Mrs. Basley is always willing to answer queries, which with the experience of others should make this a most valuable feature in poultry life on the Coast. Opinions or matters of a personal nature should be omitted, but a concise statement of facts is always valuable.

TIMELY TOPICS.

By Mrs. A. Basley.

At this season of the year the diseases that trouble fowls are usually brought on by heat, lack of shade, dirty water and spoiled food or insufficient green food. The neglect in other words of our "Rule of Three,"—"Comfort-Exercise-Proper Food."

Prevention and Cure.

Nearly every case could have been prevented by a little forethought on the part of the owner backed by common sense. Common sense should teach any one that heating and fattening foods such as Kaffir corn, Egyptian corn and the common field corn, are not adapted to the heated term and should be fed very sparingly or not all. Feed the cooling vegetables and greens, fruits and grasses in the warm weather and wait till the cooler weather of the fall for richer food, spices and condiments, if you want to feed them at all.

Vertigo or dizziness, which causes a bird to throw its head upward or backward or to bend the neck to one side, is often caused by exposure to the hot sun, lack of fresh water and sometimes from irritation of the intestines by worms, or by indigestion. The gait is staggering or uncertain, a sort of blind staggers, the bird walking backwards, sideways or in a circle. Sometimes the bird falls to the ground fluttering and making convulsive movements with the legs, and maybe unable to move for some minutes.

As treatment, apply cold water to the head and give internally 20 grains of Epsom salts. Keep the bird in a quiet, cool, shady place and remedy the defects in feeding; that is, feed green food instead of the more heating grains.

There is also a complaint somewhat similar in symptoms to vertigo which is called "limber neck." A bird so affected is unable to raise its head, which drops either on the breast or falls to one side; sometimes the head turns almost around as if the fowl were looking backwards. This disease is caused by ptomaine poisoning, which ultimately paralyzes and kills the bird. Ptomaine poison is a poison developing in animal food of all kinds. I accidentally poisoned a dozen chickens and ducks by mixing in their food some spoiled condensed milk. Some of them died very quickly, others were ill for as much as two days and I tried everything that I knew of at that time to help them. Poisons work rapidly and I then had not much experience with that poison. I have since poisoned myself and have made a painful study of the subject, and now I would give a dose of castor oil with ten drops of turpentine in it, following it with a mixture of well-beaten egg and olive oil; putting these in equal parts in a bottle and shaking well, giving a teaspoonful every two hours, after the castor oil had taken effect.

I opened the fowls to note the effect of the poison and found the intestines very much contracted, apparently shriveled or dried from the fever and spasms; some of them had streaks of blood and the liver was dark, but otherwise all other organs appeared healthy.

Limber neck is almost always caused by ptomaine poison, but possibly may also come from a disorder of the nervous system, the result of indigestion, sunstroke, or from infestation of worms. The treatment advised is: Dissolve one teaspoonful of hyposulphite of soda in half a cup of water. Give one teaspoonful of the mixture every two or three hours. Give the bird a small piece of gum asafoetida about the size of a split pea. Repeat the dose the next day.

The cases of ptomaine poisoning that have been brought to my attention have been usually traced to the animal food, generally to beef scraps or green ground bone. Beef scraps are usually a most excellent and safe food for the fowls, but in the summer time or in damp weather you should examine yours carefully. Only buy a small quantity at a time, as if you keep them in a damp, moist place you run a risk of the poison developing in it. Reject any that has a very offensive smell, or that has little rolls of a darker color in it, or any lumps. You will find white fine threadlike streaks in some of the lumps; this is poison. It is well to be very careful in this matter.

Spoiled Grain.

Avoid all grain that has any mould or mildew in it, also smutty grains. The mildew is a fungoid poison with almost the same fatality and the same symptoms as ptomaine. I remember at one time there was a fire at some miles in Los Angeles and afterwards a very large quantity of wheat that was half burned was sold as being "plenty good enough for chicken food." Letters began to come to me: "My chickens are dying, can it be from the chemicals used in putting out the fire?" I asked one of the firemen who told me that nothing but water had been used, but the dampened grain had moulded and developed the poison that killed the chickens. The best of grain is none too good for our chickens.

"Prevention is better than cure." In the autumn and when the nights begin to get cool there are two other complaints that we must be on the alert to prevent. The first is roup, and the second is chicken-pox. I have recently answered two letters from our readers about the latter.

Chicken Pox.

Chicken pox is a very contagious disease. It is not usually fatal to adult fowls but is very destructive to the young and half-grown chickens. It usually appears like small warts on the comb, around the beak eyes and nostrils and sometimes under the wings of chickens. These wart-like nodules reach their full development in from five to ten days. They soon show a central depression, an opening forms or the scab is rubbed off by the bird's beak, after which there is a discharge of a watery, or later, a thick yellowish matter, which forms a crust.

Chicken pox is a germ disease. It is said to enter by a slight puncture or wound or abrasion and many think that it is caused by the bite of a mite or flea, but it may be that the germ only enters through the puncture of the bite. Undoubtedly lice or mites carry the infection, and any abrasion gives entrance to the germ.

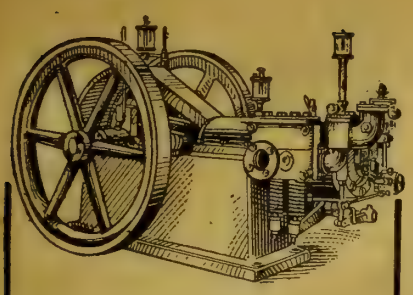
Chicken pox when taken in time is not hard to cure. The treatment is designed to kill the germ and cure the wound. Carbolic salve, or carbolated vaseline, or carbolic acid mixed with lard is about the best cure that I know. Another treatment is to bathe the affected part with soap and water in order to soften the crusts, and afterwards apply a solution of sulphate of copper (bluestone) a dram to half pint of water. A little sulphur added to the mash is said to assist in the cure, but give only a little, as it opens the pores and the bird may take cold.

The local treatment should be accompanied by cleaning and disinfecting the houses. The troughs and drinking fountains should be daily washed with boiling water.

When the disease first appears the affected birds should be at once isolated and treated and the houses and yards disinfected.

Roup.

You will never have roup in your flock of fowls if you have followed the directions for summer work in the poultry yard and if you have also kept all roupy birds away from your healthy birds. This may seem like a strong assertion, but it is corroborated by the professors at our experiment stations. "We never had roup



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Whittier is growing tomatoes weighing a pound and a half each.

at the station," said one professor last month to me, "until we got in a pen of fowls that had it slightly." "Roup is contagious and can only be given by contagion," said another celebrated professor to me. I believe that, but there appear to be occasionally sporadic cases and there are colds which seem to run into roup. Colds of all kinds are infectious even in the human family, and more so in the chicken world.

When a chicken has a cold, especially when it is of the head, and the nostrils are running, the chicken is thirsty and whenever it drinks the germs of the cold float from its nostrils on the top of the drinking water and are ready to enter the nostrils of the next chicken that drinks and so in an incredibly short time the whole flock may become infected with an influenza cold that will be hard to cure. The moment that you see a chicken or hen or any fowl with a wet bill segregate it. Put it in the hospital by itself. Then give the whole flock for several days a small bit of bluestone (sulphate of copper) in the drinking water. A piece as big as a navy bean (white bean) to each quart of water. Or give Germozone in the water, or Douglas mixture. This is to disinfect the water and kill any germs that may be there. It also dries up the cold in the head.

Disinfect.

The germs of roup are generally spread through the yard by means of the secretions and when once present in the yards the roup bacilli cannot be got rid of except by very careful disinfection and this is valueless as long as any of the fowls are diseased. The food and water is easily contaminated by the mucus from the nose and eyes and the troughs, water vessels, etc., should be thoroughly scalded and disinfected, for the germs may remain dormant for months. As the germs cannot infect healthy fowls as long as the mucous membranes are intact and healthy, the disease does not spread for a certain length of time, although the germs may be present in the yard. Then comes a change of weather, such as a sudden cold night, or the beginning of fall and winter, or the rains set in and suddenly the disease develops and roup spreads rapidly among the birds. Like colds, other circumstances that weaken the constitution of the fowls such as unsuitable feed, bad water, unsanitary yards, etc., contribute to the spread of the disease.

It can be readily seen that the most important thing is to prevent an outbreak of the disease, and if the enemy once gets in to suppress it as quickly as possible. All diseased fowls should be separated from the healthy ones. The healthy fowls should be examined daily, with the view of isolating the newly affected birds. After the segregation of the diseased birds the poultry yards should be disinfected thoroughly with a five per cent solution of carbolic acid followed with a careful whitewashing of the walls.

Some Remedies.

A few simple remedies for colds may help beginners. One thing to be remembered is that any remedy that is successful for colds in the human family will be useful with fowls.

The best thing that I know for stopping a cold is five drops of eucalyptus oil on a bit of bread or in half a teaspoonful of honey.

One grain pill of quinine and a quarter teaspoonful of cayenne pepper is another remedy always at hand.

The good old formula: Mix 2 tablespoons of lard with one each of red pepper, mustard, vinegar, adding enough flour to make a stiff dough. Roll into boluses as large as the first joint of your little finger. Give one bolus every twelve hours. One dose will often effect a cure.

There need be no colds in the flock if our rule of three has been followed. If the chickens have not been crowded, have no lice and sleep in open-front houses.

A Good One.

One tablespoon of castor oil, half tablespoon each of turpentine, kerosene, camphorated oil, and 4 drops of carbolic acid. Keep this in a little machine oil can, shake before using and squirt a drop up each nostril and in the cleft of the mouth. This is an excellent cure and cheap.

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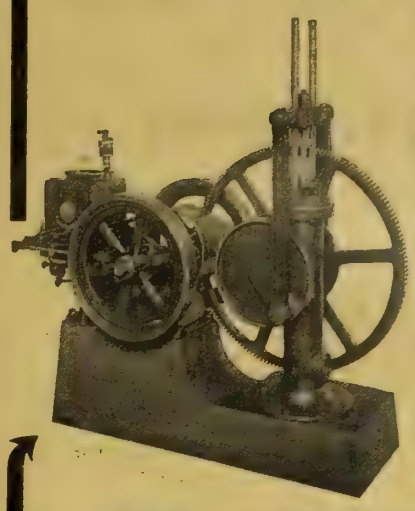

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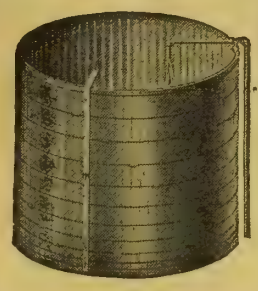

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Questions and Answers

THE EDITOR AND STAFF

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Fertilizing Chrysanthemums.

Please give best fertilizer for chrysanthemums. Is green bone meal valuable?—H. R. L., Hanford.

At this time of the year we believe we would only use nitrate of soda. The green crushed bone would be all right earlier in the season, and in fact even now might give some little advantage, but it is so near blossoming time that only the very quickest acting fertilizer should be used. If the ground is deficient in other elements, a complete fertilizer or the nitrate of soda recommended with a little sulphate of potash and super-phosphate would give quick returns.

Anonymous.

If subscriber at Exeter asking us as to separate property will write signing full name to the communication, the question will be referred to the attorney for answer in the Cultivator. Subscribers must remember that answers will not be given to unsigned questions. It is not often that we use the name of the inquirer, and never do when requested not to.

Planting Grapes.

I have a piece of adobe, has a small quantity of sand in it, not possible to irrigate, but find corn and potatoes dry out before they mature. Would grapes do well in this ground? What varieties would ripen in succession?—A. B., Santa Ana.

It would be impossible with the information given to state as to whether grapes would do well or not. What is the subsoil? Is there any hardpan or alkali? We imagine that grapes might do well, but that is poor encouragement to go to the expense of establishing a vineyard. It means too much, and one should make a thorough examination and secure the advice of an expert, unless adjoining or nearby ranches showing the same conditions offer some encouragement. The planting list will be given in a later Cultivator.

Hog Pasture.

Which is the best to plant for hog pasture, Dwarf Essex rape or peas, and at what time?—Subscriber, Porterville.

I should sow only a small piece in rape at first to see if it would make a good crop. It has been found by many farmers to be very uncertain for winter feeding in the San Joaquin Valley. Twenty years ago considerable talk about it was heard but it passed and in late years it has not been heard of as a feed. Now this may not be condemning it, but because alfalfa has been found to be the best of pig feeds and cheaper to grow. Peas may be sown now if the land is loose and can be plowed. They should be gotten in not later than December 1st if much winter growth is expected. Peas will grow only in cool weather and the more growth secured before the first of April the better will be the crop. I like to sow a mixture of twenty pounds of peas, thirty pounds of barley, thirty pounds of oats, and twenty of wheat for hog feed. This gives them considerable variety and completely covers the land. If there is any the pigs do not harvest it makes good stock hay.—M. E. S.

Timothy Hay.

Will timothy hay grow in this section on heavy adobe soil, if it can be irrigated? Could I secure more than one cutting?—A. B., Santa Ana.

We doubt not timothy would grow in this Orange County section, but we also doubt very much as to whether it would pay. Certainly if there is possibility of irrigation, alfalfa would probably produce $10 worth of hay to where the timothy would $1. You could secure but one crop. Timothy hay is not as nutritious a hay as are our common grain hays. We note, however, our subscriber says: "Alfalfa is run out by a grass known here as crab grass. It is worse than Bermuda and makes a mass of roots which check the growth of alfalfa." To overcome this we would give the ground clean culture, or, if it can be irrigated, some crop which would be profitable in that soil, corn for instance. Keep it cultivated for a year or two years, which would give opportunity to kill out the crab grass. Lands which have become foul with weed seeds are hard to handle, and clean culture is probably the only satisfactory way.

Budding Peach Trees.

Mr. P. D. Barnhart, editor of the Pacific Garden, referring to our answer as to rebudding young peach trees in orchards, says that he cannot refrain from "butting in." We suggested that two-year-old peach trees would probably give such a poor stand of buds unless the budder were an expert, that it would be as well to plant vigorous young nursery trees and remove the older trees entirely, but Mr. Barnhart says:

"If the bark of the trees will 'lift' bud them at once to whatever variety desired. They will 'take' and next spring when new growth starts, cut off the tops and the year following he will have a small crop of peaches. By this method he will be two years ahead on the game, and that too, at about a tenth of the cost, were he to grub the seedlings out and reset new trees."

Advertise Guineas.

I note you always quote guinea hens but never see any advertised for sale. Where can I get them?—Subscriber, Sulphur Springs.

We have inquiries for guinea hens very often, and yet as our subscriber says, no one seems to care to advertise them. They are used often as "watch dog" in the flock of poultry, and some are breeding them for their flesh. It doubtless would prove profitable for someone to take up the breeding of them and be able to supply this demand.

Tamworth Hogs.

Where can I buy Tamworth hogs?—Subscriber.

We haven't the name of a single California breeder of Tamworth hogs. If any of our subscribers are breeding them or have them for sale, we believe there would be demand created by advertising.

Suckering Vines.

Is it injurious to cut out suckers or unnecesssry wood at this time of the year? How many spurs should an old vine have?—Subscriber, Selma.

This is a case of too little information to give an intelligent answer. By the latter part of the question we suppose the inquirer is referring to his vineyard. It would have been better had the suckers been removed when a foot or so long early in the season. Thumb pruning would only have been necessary at that time. So long as they have remained to this time, we would wait until the vines are perfectly dormant, and remove the suckers at the time of regular pruning. As to the number of spurs and the length. It depends upon the thrift of the vine and the variety, especially the variety.

(Continued on Page 329.)

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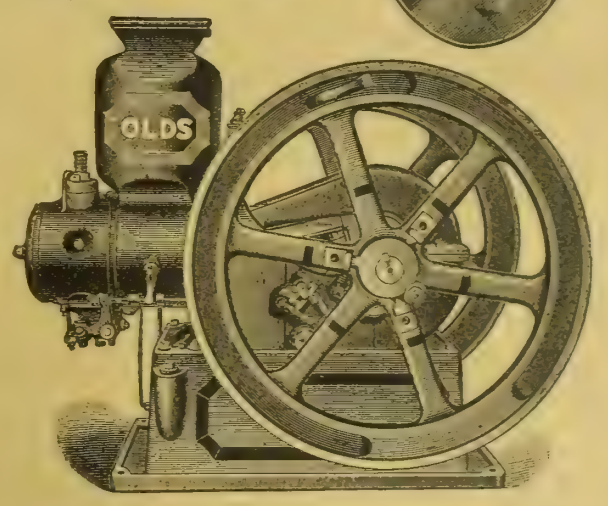

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Beautiful White Saanen Toggenburg Buck by Andreas Hofer, three months, looks like six. Pedigree, record stock. Price $25, or trade for doe. B. Stocker, San Luis Obispo, Cal.

Three Holstein Friesian Bulls, splendid young animals, for sale. Well marked and subject to registry. Write at once to Geo. C. Roeding, Fresno, Cal.

Belgian Hares—Fine, healthy breeding stock, for sale cheap. Write for your wants and prices. J. A. Reinhart, Hollister, Cal.

For Sale—Fine registered Jersey cow, good stock. T. H. Bowen, R. D. 2, Box 26, Santa Ana, Cal.

For Sale—Twenty head registered Shorthorn bulls and heifers. Best breeding. H. L. Murphy, Perkins, Cal.

Young Jersey Bulls for Sale. G. B. Reeves, Mountain View, Cal.

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Wanted—500 feet 3-4 and 1 inch old water pipe. H. S. Thornberry, Lordsburg, Cal.

DAIRY SUPPLIES

Have You a Cow?—Have you a creamery? Have you a cheese factory? Write us. Everything used in either a dairy, creamery, cheese factory, or for handling milk, cream, butter or cheese. We are in a position to quote you prices on entire creamery or cheese-making outfits. We make a specialty of only the latest and best sanitary machinery and supplies. Send us a list of what you want, and we will quote prices which we feel certain will interest you. O. J. Weber Co., 225-227 East Sixth St., Los Angeles, Cal.

TREES

Premiums for Early Orders—Trees propagated from famous orchards. Apple 12½c, pear 30c. Specialties, Newton apple, Bartlett pear. Price list on application. Medford Nursery Co., Medford, Ore.

Fine Line of Navels, Valencias and Eureka Lemons for delivery spring of 1911. Contract now and get the first choice. The King Citrus Nurseries, Whittier, Cal.

Several Thousand Each of Washington Navels, Valencias and Seedless Grape Fruit trees, 1 ft. to 2 ft. high, at 35c for this fall's planting. Orders entered now for delivery spring of 1912. Carroll B. Smith, Box 9, Redlands, Cal.

Orange, Lemon and Grapefruit Trees, all first class stock. Special prices to parties planting groves. Edward A. Carvel, 1454 Oak St., Glendale, Cal.

For First Class Valencia and Navel Orange Trees and Eureka Lemons, see A. G. Snow, Oxnard, Cal.

Low Prices on advance orders of deciduous fruit trees. Ballou's Nursery, Pasadena, Cal.

Agricultural Implements—Vehicles

For Sale—Agricultural implements, vehicles. Splendid values, lowest prices, liberal credit. See us without fail before buying. Catalogs mailed out of town customers. Write us describing what you wish to buy. When in the city a personal call will show the largest stock and assortment in the Southwest. Arnott & Company. Established 1892. 112-118 South Los Angeles Street, Los Angeles.

HORTICULTURAL PRINTING

Catalogues for the seed and nursery trade, the live stock and poultry industries, are a specialty with us. Two thousand illustrations to select from. Write for prices and samples. The Kruckeberg Press, 237 Franklin St., Los Angeles.

POULTRY SPECIALITIES.

Special Incubator Offer—We are overstocked on 130-egg size Success Incubators. We offer 50 of them at $10 each as long as they last; regular price $14. Order now. E. E. McClanahan Incubator Co., 112 East 8th St., Los Angeles, Cal.

FARM LANDS FOR SALE.

LAND OPENING.
BLYTHE RANCHO.

Wonderful opportunity now to secure this valuable land with unlimited water supply at low opening prices and on easy terms.

10,000 acres of the wonderfully rich 40,000-acre Blythe Rancho, in the Palo Verde Valley, adjoining the Colorado River, are now ready for settlers.

Buy now at the opening prices. Buy forty acres. If you cannot handle that much, buy less, but if you can possibly arrange to do so, buy more. Take all you can at the opening prices, and you will never regret it. It is the opportunity of a lifetime. Over 100 miles of completed canals await you at Blythe Rancho—there is no waiting for water. It is there now in ample volume for every acre of land we sell.

Land is ready for settlers, soil is rich as the Nile—here you get several bouncing big crops each season—the soil is a fertile alluvial deposit, rich in vegetable mould, and needs no fertilization. Will grow anything from cotton and alfalfa to oranges and lemons.

Remember, low opening prices, $60 and $65 per acre, which includes all the water you can ever use. One-quarter cash, balance in one, two and three years, with 7 per cent interest on deferred payments.

Come in and see us and make arrangements to go down and see this wonderfully rich country, where big profits are soon to be realized. Personally conducted excursion trains leave Arcade Depot every Monday night at 10:15 for Blythe Rancho. Round trip tickets to Blythe in parties of three or more, $26.50.

Accompany us on one of these trips, or write for literature. Do it NOW.

PALO VERDE-BLYTHE LAND & TOWN CO.

Exclusive Agents, Phone F5270, 501 Higgins Building,

Los Angeles, California.

Office also at Blythe, California.

For Sale—Alfalfa Ranch. I will sell my twenty acres of highest class alfalfa land, all leveled, checked and seeded, in the best irrigated land section of Stanislaus County, near the town of Patterson. Close to fine schools and churches. Best market in the state for alfalfa, hogs and dairy products. Perpetual water right goes with the land. Low expense for water. There are no buildings on the land, but I only want $3,800 for it, and you can have it

For $850 Cash,

with the balance spread over ten years at 6 per cent. This is a great chance to buy right. Address Box "O," California Cultivator, Los Angeles, Cal.

DAIRY RANCH
FOR SALE.

430-acre river ranch of deep heavy loam, with good improvements, including fully equipped dairy; 110 acres of fine alfalfa, producing from four to five heavy crops; 60 acres of fertile upland, suitable for fruits, berries and alfalfa; 130 acres fine timber and feed land; 130 acres cleared bottom land, raising large crops of grain, all suitable for alfalfa or fruits.

This property is all well fenced and lies within 1½ miles of railroad station with ten passenger trains arriving daily. For price and terms apply to G. E. Brinkerhoff, owner, Modesto, Cal.

For Sale—43½ acres, 15 miles from Los Angeles, 5 miles southeast of Covina. Located on paved boulevard and 1 1-4 miles south of Baldwin Park. Close to electric and steam lines. Sandy loam soil and level. Twenty acres set to alfalfa, balance grain. Six-room California house, domestic well and windmill. Forty shares of best water stock in the valley and very cheap. This is a very desirable ranch and well worth your inspection. Price $450 per acre. One-half cash, balance easy terms. This locality is adapted to walnuts, oranges and general truck farming. Jos. Coleman, Room 412, First National Bank, Long Beach, Cal.

Lindsay District Orange Lands cost less money; produce more than any similar lands in the state. No scale, smut or diseases common to other sections. Crop marketed before the holidays, avoiding all dangers from frost. Ten acre tracts close to Lindsay, $150 per acre. Choice alfalfa lands, abundance of water, $50 and up. For information, call or write, Kious-Whann Realty Co., 235 Mason Bldg., Los Angeles, Cal.

For Sale—A 20-acre farm for $20 cash and $20 a month; possession now; $90 to $125 per acre; your crops pay for the land; rich, level land for alfalfa, oranges, almonds, grapes, cows, chickens; abundance of ditch water for irrigation for $1 an acre a year. Where else can you get this? In Oakdale Colony, near good town and railroad station. Climate delightful. T. Wiesendanger, 207 S. Broadway, Los Angeles, Cal.

For Sale— $20 Per Acre.

350 acres A-1 citrus, grain or stock ranch, 7½ miles south of Escondido, in line of new electric road now building, half mile from boulevard. Five-room house, barn, sheds, etc. Two orchards. Two good wells, two springs. About 225 acres under cultivation, about 75 more can be plowed, balance pasture. This is a bargain. Address Conrad & Company, Escondido, Cal.

Write me for particulars on one of the best orange, lemon and walnut grove propositions you ever saw. 237 acres. 60 acres planted, full bearing. Where water costs absolutely nothing, from the mountains in Temescal, near Corona, Cal. The water right is worth one-half the cost of the ranch. No frost or scale. $10,000 crop on trees. One six-room house. Two four-room houses, barns, etc. All stock and implements. Price $60,000, one-third cash, balance terms, 6 per cent. Jos. Coleman, Room 412, First National Bank, Long Beach, Cal.

10 Acres Rich Soil on Grand Avenue, 1½ miles from Escondido; good lemon or orange land. Price $1,250. Conrad & Company, Escondido, Cal.

FARM LANDS FOR SALE.

For Sale—
THE ORANGE GROVE MAN.
Large list of orange groves in best districts. Seven years' experience in growing oranges.

A. W. RICHARDS,
THE ORANGE GROVE MAN,
Claremont and Pomona, Cal.

For Sale—San Diego mountain ranch, 160 acres, $2,000, clear; 35 acres cultivated, old house, few bees, fine water, grove, creek, healthy, suitable for stock, alfalfa, fruit or a resort. Twenty acres flat valley. Will double in value by 1915. No exchanges. Address E. T. Gray (owner), 605 W. Seventh St., Los Angeles.

For Sale—Five acres, two miles south of Monrovia, half set to deciduous fruit; plenty of mountain water and six-room house and barn. Forty acres at Corcoran, five-room house. B. F. Houser, Monrovia, Cal.

For Sale—Near Lancaster, Cal. Bargains in improved and unimproved land. Also relinquishments for sale or trade. Some homestead land. A. S. Burnham, Box 451, Lancaster, Cal.

Apple Orchards—Large and small, in the only apple producing section in California. The greatest section west of Missouri River. Write for booklet. Geo. W. Sill & Co., Watsonville, Cal.

San Diego County! My splendid weekly newspaper will tell you about this great county and superior climate. 16 weeks for 15c. H. P. Rising, publisher, Escondido, Cal.

560 Acres. $25 Per Acre.

Stock ranch; good rich soil; good buildings; plenty water; fine orchard; in line of new electric road. Address Conrad & Company, Escondido, Cal.

For Sale or Exchange for Los Angeles or Orange County acreage. Five acres in city of Santa Cruz, all in fruit, well improved. William Richard, 438 River St., Santa Cruz, Cal.

MACHINERY

For Sale—Second hand windmills, tanks, pumps, engines, farm machinery.
OUR SPECIALTY—NO WORRY.
MATERIAL GUARANTEED.
WINDMILL OUTFITS.
Fine stock 8, 10 and 12 ft. steel mills with or without tanks at about half price.
ENGINES.
1½ H. P. Fairbanks, $47.50; 4 H. P. Holly, $48; 6 H. P. Coffield complete with centrifugal pump and pipe, $195. 6 H. P. Fairbanks; 22 H. P. Foos, $390; 10 H. P. steam engine, $45; 2 H. P. steam engine and boiler; 8 H. P. boiler.
TANKS.
All kinds and sizes of second hand and new tanks, from 50 to 50,000 gal. Save you half and guarantee them.
FARM MACHINERY.
Walking and riding plows, Fresno, slip and wheel scrapers, spike tooth, spring tooth and disc harrows, mowers, two horse tree sprayer, Delaval cream separator, dry washer, seed sower, fruit crusher.
WAGONS, BUGGIES, HARNESS.
Outside shipments receive personal attention. Prices very lowest good serviceable material can be furnished for. Get others' prices, then compare material and prices with us.
DEMMITT CO., 120 N. Main, Los Angeles.

For Sale—The following machinery, taken in exchange, must be closed out: Gas engines; electric motors, pumps, steam engines, air compressors. Also belting, pulleys, shafting, wood working machinery and sundries. Will install complete pump if desired. Also have a full line of new machinery. Bailie & Brandt Co., 943-45 N. Main St., Los Angeles, Cal.

Walnut Growers, Attention—I have a Meier No. 2 walnut huller for sale, but little used. I had to dig up my trees is reason for selling. It is a money saver, does good work. Less than half price, $30 f. o. b. San Diego. Address, N. P. Eisenmayer, Nestor, Cal.

FARM LANDS WANTED.

WANTED—COUNTRY PROPERTY.

We have for sale

We want

Unlisted property, to which we give our personal attention. List it with us if you want quick money.

We have for sale improved farms and ranches in all parts of California. If you want to buy or trade, write us, giving details as to location wanted. We make a specialty of financing water projects.

Write. Phone. Call.
Sunset Investment Company, 418 Union Trust Building, Los Angeles.
Phone Home F 2310.

Farms Wanted—We have direct buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property Free. American Investment Association, 12 Palace Bldg., Minneapolis, Minn.

Wanted—Five or ten acre orange grove near Alhambra or Sierra Madre; prefer without buildings, but want good building site. Also want to list, for sale or exchange, acreage anywhere. F. R. Boag & Co., 2307 S. Hoover, Los Angeles, Cal. West 1983. 24696.

ORNAMENTAL PLANTS

Plants of all kinds, wholesale and retail, at Las Palmas Greenhouses, Palo Alto, Cal. Contracts solicited. Let us know your needs at once.

FOR RENT

Pasture to Rent—3,000 acres. Good stubble and wild feed. See R. Phillips, P. O. Gaviota, Cal.

Farm to Let—Two orange groves, 10 and 15 acres, two or three years to right party. Converse, Glendora, Cal.

SEEDS AND PLANTS

Berry Plants and other good things for the garden and farm. My new catalogue is just out; send for it now. Louis F. Scribner, Pasadena, Cal.

MISCELLANEOUS

Free—"Investing for Profit" Magazine. Send me your name and I will mail you this magazine absolutely free. Before you invest a dollar anywhere, get this magazine—it is worth $10 a copy to any man who intends to invest $5 or more per month. Tells how $1,000 can grow to $22,000; how to judge different classes of investments; the real power of your money. This magazine for six months free if you write today. H. L. Barber, Publisher, R. 430, 28 W. Jackson Boulevard, Chicago, Ill.

For Exchange—for lemon trees for next spring's planting. Good as new E-M-F 30 Auto, 1911 top, glass front and speedometer. Shock absorbers. New tires. Ward Realty Co., San Dimas, Cal.

The Bell Agency. A general public service bureau, 833 Market St., San Francisco. Attends ot anything for anybody. Bank references. E. D. Dement, Mgr.

Imported Swiss Toggenburg Buck "Chieftain." Service fee reasonable. Bred grade does for sale. L. C. Buhl, Pomona, Cal.

POULTRY

How to Make Money—Mrs. A. Basley's Latest Poultry Book is without exception the most wonderfully complete manual on the subject of successful poultry management ever written. The secret of how to raise every turkey hatched and the "Basley Formulas," now published for the first time, are worth many times the price of the book. The "Western Poultry Book" is a practical book by a practical woman. Price $1. Address Mrs. A. Basley, Box 77, Venice, Cal.

The Goodacre Strains—Our Red chicks are hatching strong, only $12 per 100. Do you want Ancona chicks at $15 per 100 or 18c each? How about yearling males at $3 for Leghorns and Anconas; $5 to $7 for R. I. Reds and Buff Orpingtons? Eighteen Leghorn hens and cock for $20; R. I. Red young cock and four hens, $12; Buff Orpington young cock and four hens, $14. Write for our summer price list. Goodacre Bros., Compton, Cal.

Standard Poultry Yards—Are booking orders for eggs from the best Cook or Kellerstrass White Orpington chickens on earth, from $2.50 to $5.00 per setting and from $15.00 to $30.00 per hundred. Baby chicks 50c each. Six-weeks-old chicks $1.00 each. E. C. Worden & Son, 4004 University Blvd., San Diego, Cal.

For Sale—Pullets, cockerels and yearling White Orpingtons (Cook strain), Black Minorcas (Northrup strain), White Minorcas, R. I. Reds (Tompkins strain), pure bred. C. U. Chamberlin, Los Gatos, Cal.

Day-Old Chicks, Barred Rock and White Leghorns, good laying strain. Order now to insure early fall delivery. The Fairmount Hatchery, 29 B Rural No. 1, Santa Cruz, Cal.

Poultry Wanted—We pay the highest market price for all the local poultry we can get, no matetr how large the quantity; also fresh ranch eggs. We remit immediately. Allaway & Layton Co., 607 E. Third St., Los Angeles, Cal.

Orpingtons—High class Buff and White. Bred to lay from prize winning stock. 500 pullets and cockerels for sale. Reasonable prices. Will mate pens with unrelated males. Write Mrs. S. Swaysgood, Route 1, Healdsburg, Cal.

Just Hatched White Leghorn Chicks every month, from select, heavy laying, mature stock. No pullet eggs used. Lodi Hatchery, E. Elm St., Lodi, Cal.

White Leghorns—Buff Orpingtons. Bred for beauty and great egg production. Grand lot of both old and young stock for sale. Prices reasonable. Write your wants. Model Poultry Farm, Box H, Irvington, Cal.

Hicks Jubilee Hatchery, now booking orders. Write us your wants. We use eggs from first-class stock only. Try us. W. J. Hicks, Petaluma, Cal.

For Sale—Now is the time to place your order for baby chicks, all breeds, 20,000 capacity. Can fill order, large or small. Carl Matson, Inglewood, Cal.

Western Hatchery—We are booking orders for day old chicks hatched from well selected, well bred stock. Write for prices and terms. Western Hatchery, Western Ave., Petaluma, Cal.

Schellville Hatchery. Thoroughbred White Leghorn chicks, hatched from heavy winter layers. The kind that pay. No dead or weak chicks charged for. Order early. Box R 72, Sonoma, Cal.

For Sale—Barred Rock Cockerels about six months old, also day old chicks hatched to order. Enoch Crews, R. No. 1, Santa Cruz, Cal.

I have a choice lot of pure bred Brown Leghorn young roosters. Will sell at $1 each or six for $5 if taken before Nov. 1. Lee Dudgeon, Soledad, Cal. R. D. 1.

The Luedkes—Incomparable R. I. Red high record layers. Eggs by the hundred $6.00. Fancy matings $3.00 for 15. P. O., Anaheim, Route 1.

S. C. Rhode Island Reds—Fine big pullets for sale at $1 each. L. Hayres, Madera, Cal.

Rose Comb Black Minorcas, nine years line bred. Stock and eggs in season. Eleanore Minorca Farm, R. D. 1, Los Angeles, Cal.

Barred Plymouth Rocks—The kind that "win and lay." Eggs and stock for sale. C. H. Vodden, Los Gatos, Cal.

150 S. C. White Leghorn Hens, 11 to 12 months old, $8 per dozen. T. J. True, Lancaster, Cal.

Kellerstrass Crystal White Orpington Eggs, $2 per 13. R. L. Warren, National City, Cal. R. D. 1.

DUCKS

We have a few genuine "Rankin" strain Mammoth Pekin drakes to spare that will add a pound each to your next lot of ducks. Grand big fellows, fit to show. Price two to five dollars each. Eggs from our best pens, $10 per hundred, $2 setting. Long Beach Poultry Ranch, Long Beach, Cal.

Indian Runner duck eggs from stock carefully bred for heavy layers. Price $1.50 per dozen. Drakes for sale. Mrs. Fred Chester, Santa Rosa, Cal., Route 2.

White Indian Runner, Fawn Indian Runner, Aylesbury and Buff Orpington Ducks, stock and eggs. Catalog free. Caldwell Bros., Los Angeles, Cal.

GEESE

For Sale—Fine Toulouse geese for breeders. D. S. Willey, Damask Ave., N. Inglewood, Cal., R. D. R. No. 1.

RARE PLANTS

Wild Plant Improvement Gardens, Santa Ana, California. Newton B. Pierce, proprietor. Rare choice ornamentals and new fruits from all lands.

QUESTIONS AND ANSWERS.

(Continued from Page 327.)

If our subscriber will write again stating the variety of grape and their age, we will get from a practical vineyardist the information for him.

Pears Interset with Bartletts.

What varieties and what number is best for intersetting with Bartlett pears?—Subscriber, Santa Ana.

According to "California Fruits" the best pear to interset with Bartletts is Bartletts. It certainly is the favorite in the market. The book says:

"As very few varieties of pears are largely grown in California and as the Bartlett generally bears well when grown in large acreages by itself, the eastern claim that the Bartlett is self-sterile does not seem to be justified in California experience. Recent observations indicate that even at the East the Bartlett is self-fertile when conditions are favorable to setting of the fruit and self-sterile when they are otherwise. As conditions are usually favorable in California this may be the reason why its self-fertility is more conspicuous here than at the East. It has been individually noted, however, that the White Doyenne is a good fertilizer for the Bartlett."

Apple Trees from Missouri.

I am thinking of sending to a Missouri nursery for apple trees. Do I run any risk of having the package opened and examined every time the tree enters a new state or a different county? If so, would this not ruin them before arrival here?—Subscriber, Neenach.

There would be no examination of the trees in transit, but the railway company cannot deliver them to you until they pass inspection of your own county commissioner or his deputy. If they prove to be entirely free of any pest they will then be delivered to you. We believe we may safely suggest, however, that you will probably get better satisfaction and less trouble by dealing with coast nurserymen.

Fits.

I have a Rhode Island Red six months old which has fits. Sometimes it seems to be dying and then in a few minutes as well as ever. We feed them wheat.—Subscriber.

See Mrs. Basley's article in this week's issue.

Mildewed Grapes.

A subscriber near Whittier submits bunches of Emperor grapes badly mildewed. Bunches were well formed, some almost ripe before the attack began.

Mrs. Sherman recommends spraying with the lime sulphur solution before the vines start to grow the coming spring.

SALE OF GREAT STOCK.

On the first cover page is shown a photograph of one of the world's great cows. She with others, some bred in California and some imported from the world's best herds, will be offered at the Geo. A. Smith public sale at Corcoran, Kings Co., on Tuesday, Oct. 17th. Col. D. L. Perry, of Columbus, Ohio, and one of the best auctioneers in the United States, will conduct the sale. To make the merest list of great animals to be offered at this sale will be impossible in this column, but we may at least advise all who have any admiration for the beautiful Jersey, to write to Mr. Smith for his immense sale catalogue. It gives pedigrees of the animals to be offered with illustrations of many of them, and fullest information as to conditions of sale. It also gives engravings of some of Mr. Smith's Gold Medal winnings. Mr. Smith has had the nerve to import some great animals. It will be an education to attend his sale and see them, and incidentally we trust California livestock breeders will encourage just such men as Geo. A. Smith in the bringing of still more of this great stock to our State. It is the best way of building up its wealth.

FALL BULBS.

Theodore Payne, seedsman and nurseryman, at 345 S. Main St., Los Angeles, is now mailing his new bulb and fall flower seed catalogue. It is not large, only about 20 pages, and one fold makes it an exact pocket size, but it is chuck full of interesting information for the flower gardner. With the text are a number of beautiful little engravings showing some of the more desirable flowers. If the Cultivator is mentioned, we imagine a postcard might secure a copy of it by addressing Mr. Payne.

Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 225-227-229-231 East Sixth Street, Los Angeles.

OUR HARROW SALESMAN SAYS:—
"The selection of a good harrow requires almost as much care as the selection of a good wife. There is no known rule by which all men can avoid getting poor wives, but you can avoid any possible harrow trouble by buying a "Sunshine."

You should send for our Free Booklet about Harrows. It may lead you to buy a

Sunshine Harrow

exactly suited to your needs and "Made Good" before you buy. You may also avoid buying a harrow which has to be "made good" after you buy it.

Newell Mathews Company

Established 1886

200-202 N. Los Angeles St. Los Angeles, Cal.

The Secret of Raising Plump Poultry

Over 18 years ago Dr. Hess set about tackling the problem of wasted nutrition—one of the drawbacks that cost poultry raisers thousands of dollars annually. After prolonged feeding and scientific experiments in his laboratory he introduced Dr. Hess Poultry Pan-a-ce-a, a preparation consisting of highly concentrated tonics, which enable fowl to extract the largest possible amount of nutriment from their ration and convert it into eggs, flesh, blood and feathers. In other words,

Dr. Hess Poultry Pan-a-ce-a

solved the digestion problem, carrying out "The Dr. Hess Idea" that the more food digested, the more went to the system-building and less to waste. At this time of year, when cholera is prevalent among poultry, Dr. Hess Pan-a-ce-a is particularly beneficial, as it strengthens and tones up the system and helps fowl ward off disease. It also cures Roup, Gapes and other poultry ailments and keeps hens in splendid condition for laying winter eggs. A penny's worth feeds thirty fowl per day. Sold under this guarantee:

Our Proposition

You buy Dr. Hess Poultry Pan-a-ce-a of your dealer. If it fails to make your hens lay more eggs and keep your poultry healthy, he is authorized by us to refund your money. 1½ lbs., 35c.; 5 lbs., 85c.; 12 lbs., $1.75; 25-lb. pail, $3.50. If your dealer cannot supply you, we will. Send 2 cents for Dr. Hess' 48-page Poultry Book, FREE.

DR. HESS & CLARK
Ashland, Ohio

Dr. Hess Stock Tonic A digestive tonic of great value. Especially helpful to hogs, helping them to digest more food and put on flesh very rapidly. Keeps the stomach clean—wards off cholera—expels the worms. It is a sure flesh and milk producer. 100-lb sack, $7.00; 25-lb. pail, $2.25. (Smaller quantities at a slight advance.) Sold under a written guarantee.

FREE from the 1st to the 10th of each month—Dr. Hess (M.D.,D.V.S.) will prescribe for your ailing animals. 96-page Veterinary Book Free for the asking.
Mention this paper and enclose 2c. stamp.

INSTANT LOUSE KILLER KILLS LICE

GAS! You Can Have It In Your Country Home **GAS!**

Or anywhere for cooking, heating, brooders, lemon curers furnaces or anything requirers heating.

More Efficient Than Wood or Coal

and gives immeasurable comfort and convenience.

How We Solve the Fuel Question

Wood and coal were efficient enough in our forefathers' days when the modern methods were unknown, but with its ashes, dirt, labor and inconvenience it is no longer giving that state of comfort and refinement so much sought after by the modern home, to say nothing of its scarcity and enormous expense. Would you be interested in a proposition whereby you are saved one-half your present fuel bill and given all the conveniences of a city home? Our home-made gas system gives you this. There is no smoke, soot, odor, noise, danger, ashes, dirt, building fires nor carrying fuel. Gives you quick and unlimited heat, pleasure, efficiency, economy, and convenience, and in short improves your home immeasurably.

Absolute Guarantee—Each and every outfit is covered by a positive guarantee.

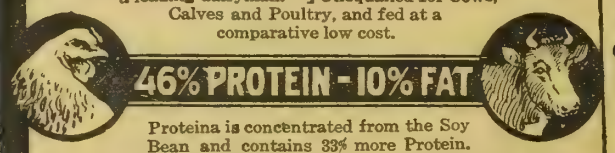
If you are looking for these advantages, write for further particulars at once. Let us tell you what we can do for you.

Blue Flame Distillate Burner Co.

650 So. Los Angeles, St., Los Angeles, Cal.

Cows Give 262 lbs. More Milk Daily

After substituting a part of their regular feed with Proteina, says a leading dairyman. ¶ Unequalled for Cows, Calves and Poultry, and fed at a comparative low cost.



46% PROTEIN - 10% FAT

Proteina is concentrated from the Soy Bean and contains 33⅓ more Protein.

The U. S. Agricultural Dept. says: "A bushel of Soy beans is at least twice as valuable for feed as a bushel of corn." ¶ POULTRYMEN FIND PROTEINA BETTER THAN BEEF SCRAPS FOR LAYING HENS. Write for signed letters from Poultrymen and Dairymen.

Proteina SOY BEAN OIL MEAL MANUFACTURED BY PACIFIC OIL MILLS SEATTLE

SOLD BY DEALERS OR PACIFIC OIL MILLS, SEATTLE.

Germain Seed & Plant Co., So. California Agents

326-328-330 S. Main St., Los Angeles, Cal.

NITRATE OF SODA

We are prepared to furnish Nitrate of Soda at the lowest market price, and will be pleased to quote prices and furnish literature to any one interested, or application. Advise us what crops you are interested in.

NITRATE AGENCIES COMPANY

W. S. SPARR, Agent, 321 Stimson Block, Los Angeles

Apple Annual

WATSONVILLE

October 9 to 14

Special Rate excursion tickets from all points.

Sale Dates

October 6 to 14

Final Limit

October 20th, 1911

SEE AGENTS

SOUTHERN PACIFIC

LOS ANGELES OFFICES
600 South Spring Street.
Arcade Station, Fifth and Central Ave.
River Station, 1500 San Fernando St.

PASADENA OFFICE
148 East Colorado Street.

Household Department

DREAMING.

Dreaming, just dreaming, as bed-time draws nigh;
Waking dear memories as twilight rays die;
Thinking of days that are now long gone by;
Dreaming, just dreaming, that's all.

I see a farm house and the old red mill;
I hear the song of the weird whip-poor-will;
Tho' long ago, the picture haunts me still;
Dreaming, just dreaming, that's all.

Dreaming, just dreaming, I see home again;
Tho' it brings heart aches, it's worth all the pain;
In it is rest for my poor aching brain;
Dreaming, just dreaming, that's all.

It lets me wander as a child once more,
My friends return from that far-away shore;
From this dull earth my feelings heav'nward soar;
Dreaming, just dreaming, that's all.
—Harry Rowe Shelley.

FURNITURE AND LOVE.

"This is one of the most beautiful spots I have ever visited," said Grace, as she rocked idly in her chair. "The man who conceived the idea of building a hotel here should have a monument raised to his memory."

"Rather say that he should be permitted to live here forever," suggested Smithson lazily. "Why put him under the sod so quickly?"

"I meant when he dies, of course," amended Miss Hargreaves. She smiled brightly into the other's eyes, and, for the 100th time that afternoon, Smithson caught himself wondering why he had never realized before what a charming girl Grace Hargreaves was.

He had known her for years, but it was not until they found themselves among the first guests of the new hotel in the Restigouche region of New Brunswick that he had had his attention particularly drawn to her. The hotel had only been open two weeks, and guests were still few.

"How did you find the place?" he suddenly demanded.

"Mother wanted a new place," she explained. "Some men who hunted through here last year told her about the hotel that was being built and she insisted upon coming."

"I am here for old furniture," he volunteered. "There are all sorts of odd pieces to be picked up for a song. Their beauty lies in their genuineness; old bits brought out generations ago and used by their present owners who cast longing glances at the painted woods in the shops at Dalhousie."

Grace gave a little scream of delight.

"Do you mean to say that there are really places where you can still pick up old furniture?" she asked eagerly. "If I had only known! I shall have to telegraph for more money. Old furniture is a passion with me."

Smithson scowled, then smiled. He had hoped to have the rich field for himself, but second thoughts rather approved of so fair a rival.

"Suppose we pool issues?" he suggested. "In that way we shall not bid against each other and raise the prices. I'll buy it all up and when we get back to town in the fall we will have a division."

Grace nodded her assent and after being pledged to secrecy lest others learn of their plans, she ran off to confide her secret to her mother.

Smithson hired a team for a month and daily the three fared forth in search of treasure trove. The others at the hotel wondered at the long drives upon which Mrs. Hargreaves and her daughter went under Smithson's guidance, but none of the furniture they picked up was brought to the hotel and the nine-day wonder soon dropped.

Smithson picked up some wonderful bargains and had them all shipped to his town house. Before his vacation time was over he had skimmed the cream of the colonial collections in a ten-mile radius, but even the anticipation of unpacking his treasures did not console him for the fact that Mrs. Hargreaves had elected to remain for another month.

The long delightful drives behind the fast team had deepened companionship into love, and as he cleaned and polished his purchases with the painstaking care of a true enthusiast, each piece was a reminder of some little happening of the vacation.

He did not fully realize this until some weeks later, when at last Mrs. Hargreaves returned to town and Grace came to claim some of the spoil.

"I should like that old desk," she said, as she pointed to one of the acquisitions. Smithson's face clouded.

"I was hoping that you would not want that," he said. "That is a souvenir of our first drive."

"We got a lot of things that first day," she reminded, and then blushed as she remembered that moment when Smithson's hand had unconsciously dropped upon her own upon the desk. It had been only an instant, but it had stamped itself indelibly upon her brain.

She could not tell him that that was why she wanted it herself, and she wondered if that was also the reason why he wished to keep it. She passed on to other things, but each one had some association, and his forlorn expression as she made her choices touched her.

"I really hate to take any of these things away," she said at last. "There are no duplicates, and they make such a complete whole that it would be a shame to spoil it all by breaking the collection."

"That might be avoided," he said, bitterly, "if I had given less time to the collection and more to the promptings of my heart. It is not selfishness that makes me want to keep these things. It is because each has some association with that happy time. I look at that table and remember our lunch of bread and milk we made off its surface. It's the same way with everything else. Each piece reminds me of you and I am loath to give up even one tiny souvenir of that time."

"Is it really necessary to break the set?" she asked.

"You mean that—that you care for me?" he asked.

Grace nodded.

"No one but a stupid man would have needed to ask that question," she said softly, as she patted the desk affectionately.

His hand dropped upon the slim fingers lying upon the polished surface.

"We can make a very lovely home with these—and you, sweetheart," he whispered. "And to think that all this time I thought your interest was only the love of a collector."

"The love for a collector," she corrected, softly, as she yielded to the arm that slipped about her waist."—St. Louis Globe.

LAUNDRY ECONOMY.

Soft water, for use in laundry work, saves soap, clothing, time, energy and money.

Buying soap by the box is more economical than buying it by the quarter's worth.

Removing the soap from the box, and piling it in such a way that it will dry, causes it to wash away less rapidly, and therefore to last longer, than if not dried.

Having a firm, substantial wash bench, of a height suited to the worker, so constructed as to hold the tubs securely in position, saves time and energy.

A good stationary wringer, or one which is so made as to be clamped securely to the tub, is a necessity. When through using the wringer, loosen the screws to relieve the pressure on the rubber rollers; wash clean, wipe dry, and put it away where it will keep clean until needed. Occasionally cleaning the wringer with kerosene,

Natives digging and loading asphalt at Trinidad Lake

Genasco is the roofing of the age. Its foundation has stood for ages past.

It beats shingles. They warp, crack, split, and rot—more so now than ever before (lumber is getting scarcer, and shingle-quality is becoming poorer every year).

Beats tin, which rusts and needs painting regularly. And even with paint tin doesn't last like it used to—quality has deteriorated here, also.

Coal tar has the same old faults it has always had—gets soft and melts in the summer sun, and gets brittle and cracks in the cold, and leaks.

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and then washing with soapsuds, rinsing and drying, tends to keep it in good condition.

The ironing table should be of a height suited to the ironer; not low enough to cause the worker to stand in a stooped position, nor so high as to necessitate the lifting of the shoulders while ironing.

The ironing pad and sheet should be perfectly smooth, and securely fastened to the table, if rapid, efficient work is to be done.

Irons should be of medium weight, smooth and clean. When through using the irons, remove them from the stove and set them on end in a dry place to cool. When they are cool, see that they are clean before putting them away. Irons that are left on the stove day after day are liable to be rough, dirty and unfit for use.

A slip for the ironing holder, made of some coarse white material, is convenient and desirable, because it can be so easily laundered.

Rub the iron, each time it is taken from the stove, on a piece of clean paper or cloth, before using, to prevent the possibility of soiling or scorching the article to be ironed.

A clothespin bag, which can be tied about the waist when hanging out or taking in the wash, saves many steps and keeps the clothespins clean.

A rope clothes line should be taken down when not in use, and kept in the clothespin bag, where it will be protected from dust and be handy when wanted.—Mary L. Bull, Extension Division Minnesota Agricultural College.

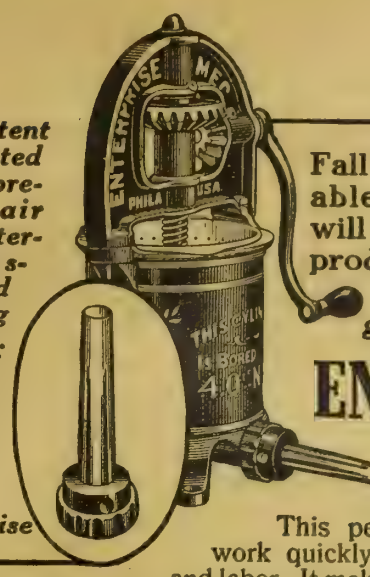
TO CLEAN DAINTY WOOLENS.

White corn meal is excellent to dry clean white or any delicate shade of woolen goods; also for cleaning knitted and crochet articles that are not quite soiled enough to be washed. The meal must be heated in the oven and the article rubbed through it as if washing in water, and there is nothing better for cleaning white furs than very hot corn meal, and the best way to clean them is to lay them flat on a table and rub the meal through every inch of the fur.

White angora hoods and furs that are only slightly soiled may be made to look as nice as new by rubbing them with flour. Put the article to be cleaned in a small sack and use about a pint of flour for one hood, then fold the sack and rub and press between the hands until the article is clean. The best way to clean a shawl to keep it in shape is to baste it to a piece of soft cloth before washing. They can also be made to look very nice by putting into a pillow case and then tying a string around the top and washing in plenty of hot suds. The article can be washed, rinsed and dried in the sack. There is no better way than this for washing baby sacques and caps, and all such dainty woolens, and after they are washed and rinsed they shold be hung in a warm place and the sack containing them turned and shaken often until the articles are perfectly dry.

Everything depends upon the soap used in washing woolens and there is nothing better than soap chip suds for washing all woolens, and this is prepared by dissolving some soap chips in hot water and then stirring in warm soft water until a nice lather is made. There is enough borax in the soap chips to soften the water and the articles are easily cleaned by pressing and squeezing between the hands. The all white woolens are improved by soaking in the suds, but colored ones should be washed and rinsed as quickly as possible. The Twenty Mule Team soap chips are excellent for washing the soft woolen blankets used on children's beds, and sweaters and caps are kept soft and of good color as long as they last by washing through these suds, but all the changes of water must be of the same temperature and they must be dried in a warm place. A little blueing can be used in the last rinse water for the all white goods, and a little dye of the same color as the garments for the colored goods.—Aline.

It is the quiet worker that succeeds. No one can do his best, or even do well, in the midst of badinage, or worry or nagging. Therefore, if you work, work as cheerily as you can. It is the pleasant word, the hearty word that helps.



This patent corrugated spout prevents air from entering casing and spoiling sausage. One of many points of superiority of the Enterprise

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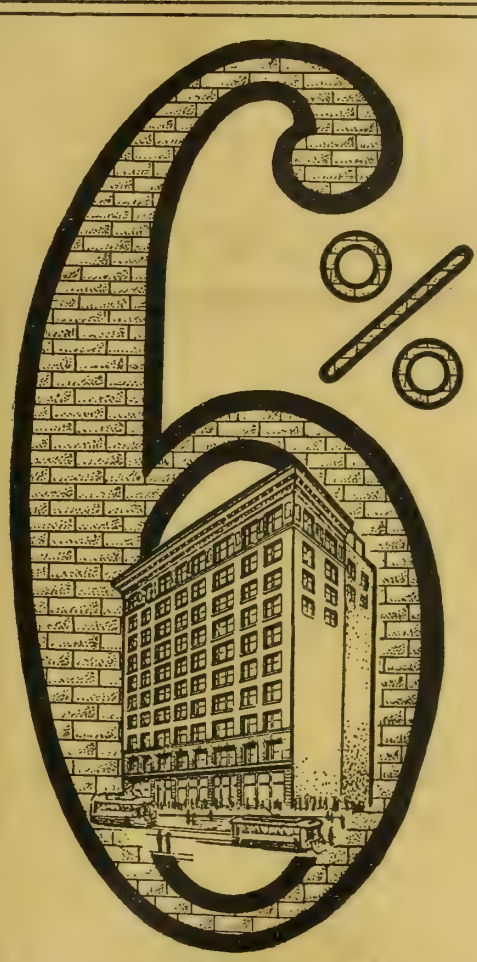

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935 So. Los Angeles St. LOS ANGELES, CAL.

San Francisco-Los Angeles Produce Markets

Los Angeles Market

Los Angeles, Oct. 4, 1911.

Butter.

Butter market is exceptionally firm and a one-cent advance is noted on extras.

Prices to trade 2½c in advance of the following Produce Exchange quotations:

Extras	27½
Firsts	25
Ladles	23
Country	20

Cheese.

Local Anchor	16
Oregon Daisy	16½
Northern Fresh	16
Domestic Swiss	18
Imported Swiss	32

Eggs and Poultry.

Case counts are advanced 2 cents this week and market shows exceptionally firm tone.

Paying prices f. o. b. Los Angeles are:

Local ranch, candled	44
Case count buying price	40
Eastern	32@34
Eastern storage	25@26
Pullets	26

Dealers pay for live poultry f. o. b.:

Hens, per lb	11@15
Roosters	7
Broilers	14
Fryers	12
Roasters	14
Turkeys	21
Ducks	12
Geese	12
Guinea hens, doz	4.00
Squabs, doz	1.65

Live Stock.

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs	7¼
Prime steers	6
Heifers	6
Calves, per lb	6½
Sheep, ewes, per head	4.75
Lambs, per head	3.75@4.25
Wethers	5.00@5.50

Potatoes.

Wholesale prices are:

Sweets, yellow, ctl	1.75@2.25
Highlands, ctl	1.30@1.65
Salinas	175@185

Onions.

Wholesale quotations:

Australian Brown, ctl	1.35
Silverskins, sack	1.75@1.85
Yellow Danvers, ctl	1.35
Garlic	5@6

Vegetables.

Wholesale quotations:

Artichokes, northern, doz	90@1.10
Beets, doz bunches	25@30
Bell peppers, lb	4@5
Beans, wax	6@7½
Brussels Sprouts, lb	10
Beans, Limas	7@8
Green chilis	3@5
Chilis, dried	12@13
Cucumbers, lugs	30@40
Cabbage, sack	75@85
Cabbage, red, lb	3
Cauliflower, doz	1.00@1.25
Celery, new, crate	1.50@1.75
Carrots, sack	90@1.00
Corn, lug	45@60
Egg plant	3@5
Horseradish, lb	13½
Onions, green, doz bunches	20@25
Kohl-rabi, doz bunches	40
Leeks, doz.	45@50
Lettuce, crate	90@1.10
Mushrooms, lb	50@1.00
Oyster plant, lb	15@20
Okra	6@8
Peas, lb	5@7
Parsnips, doz. bunches	45
Parsley, doz bunches	25@30
Turnips, sack	90@1.00
Radishes, doz bunches	15@20
Rhubarb, Strawberry	1.00@1.25
Spinach, doz	15@20
Squash, summer	30@40
Spearmint, doz	25@30
Tomatoes, lug	25@35
Turnips, sack	1.00@1.25
Watercress, doz	35@40

Citrus Fruits.

Valencias	3.50@4.00
Grapefruit	2.00@4.00
Lemons	2.00@3.75
Limes, hundred	1.25

Fresh Fruits.

Wholesale prices on the market are:

Alligator Pears	1.50@2.50
Apples, Alexanders	1.00
Apples, Bellflowers	1.15@1.25
Apples, Skinners	1.00
Apples, Spitzenburgs	1.65@2.00
Jonathans	2.35@2.50
Apples, Crab, lug	1.50
Bananas	4@4½
Casabas, crate	90@1.00
Cantaloupes, small	75@1.00
Cantaloupes, large	1.50@2.00
Figs, box	75@1.25
Grapes, Thompson Seedless, lb	3
Grapes, Black Hamburg, lug	65
Grapes, Muscats	65
Grapes, Malagas, lug	90@1.00
Grapes, Tokays	80@90
Loganberries	6@8
Peaches, lug	60@90
Pineapples	7@8
Plums, Clymans, lug	1.50
Plums, Tragedy	1.50
Pears, Bartlett, lb	5
Quinces, lug	1.00@1.25
Blackberries	6@8
Raspberries	10@12
Strawberries	4@8
Watermelons, lb	¾@1

Dried Fruits.

Wholesale prices to retailers are:

Evaporated Apples, fancy, lb	12@12½
Apricots	16@17
Figs, box	1.50@1.75
Peaches	11@12½
Nectarines	12
Pears	12@13
Prunes	8½@14
Plums	10

Beans Dried.

Wholesale quotations:

Limas	6.00
Black eyes	4.50@5.00
Pinks	4.50@5.00
Lady Washington	4.25
Small white	4.10@4.25
Garvanzas	4.50
Bayous	4.50@5.00
Lentils	6.00@7.00
Mexican Reds	4.75@5.00

Nuts.

Walnut growers of Southern California met last Saturday and recommended a 14c price. There was much opposition to such a low figure, some preferring at least a 15c figure.

Wholesale quotations:

No. 1 soft shell walnuts	14
No. 1 H. S. walnuts	13½
No. 2 walnuts	11
Almonds, IXL, lb	19@20
Pecans, polished	15@17
Peanuts, Eastern	8
Peanuts, California	6
Pine Nuts	18

Honey.

Wholesale quotations:

Extracted water white	8½
Extracted light amber	7½
Comb water white	16@17
Light amber	13@14
Beeswax	30

Hay.

Buying prices f. o. b. cars Los Angeles are:

Barley hay	13.00@14.00
Wheat hay	12.00@13.00
Tame oats	15.00@17.00
Alfalfa	13.50@14.50

Grain.

Wholesale selling price f. o. b. Los Angeles:

Wheat, new, cental	1.70@1.80
Corn	1.85@1.95
Kaffir	1.80
Millet	3.75
Popcorn	4.75@5.00
Egyptian corn	1.80
Red oats	1.80
Seed barley	1.50
Milo	1.90

Feed Stuff

Wholesale selling price f. o. b. Los Angeles:

Alfalfa meal	1.15
Beef scrap	3.10
Bone meal	2.05
Charcoal	2.00
Cracked corn	1.90
Cracked wheat	1.90
Shorts	1.95
Bran	1.70
Oil cake meal	2.50
Feed meal	1.95
Rolled barley	1.80
Middlings	1.85

San Francisco Market

San Francisco, Oct. 3, 1911.

Butter.

Butter is firm with about 70,000 pounds daily receipts. Quotations exactly as last week.

Prices to trade 2½c in advance of the following Produce Exchange quotations:

California extras, lb	27
Prime firsts	25
Firsts	24
Seconds	22

Cheese.

Cal. flats	11@14
Cal. Y. America, fy, new	15@16½
Oregon, fancy	13½

Eggs and Poultry.

Eggs dropped a cent on Saturday and now are very firm at a cent lower than last week's quotations.

Official quotations of the San Francisco Wholesale Dairy and Produce Exchange are:

Fresh ranch extras	42
Firsts	35
Seconds	21
Eastern seconds	16
Select pullets	34
Hens, doz	4.00@9.00
Fryers, doz	4.50@5.50
Ducks	4.00@7.00
Broilers	2.50@4.00
Roosters, doz	4.00@9.00
Geese	2.00@3.00
Goslings, pr	2.00@2.25
Pigeons	1.50@2.00
Turkeys	24@27
Squabs	2.00@2.50

Live Stock.

San Francisco prices, gross weight:

Steers	4@5¾
Cows and heifers	3@4½
Calves, lb.	5@6¾
Hogs	7@7¼
Wethers No. 1	3¾@4
Milk lambs	4¾
Ewes, No. 1	3¼@3½

Potatoes.

Wholesale market quotations:

River, whites, ctl	1.00@1.25
Alamedas	1.50@1.75
Sweets, ctl	1.50@1.80

Onions.

Yellow, new	75@85
Garlic, new, lb	3@4

Vegetables.

Wholesale quotations:

Asparagus, box	1.00@1.75
Beans, string	1½@3
Beans, wax	1½@2½
Limas	2@3
Bell peppers, box	75@1.00
Cabbage, ctl	75@85
Carrots	70@75
Cucumbers, box	35@50
Corn, sack	50@1.25
Chili peppers, box	25@50
Celery, crate	1.50@2.50
Egg plant, box	20@30
Cauliflower, doz	50@60
Lettuce, crate	75@2.00
Okra, box	40@60
Peas, sack	1.75@2.00
Hubbard squash, sack	1.00
Summer squash, lug	50@75
Squash, Marrowfat	60@75
Tomatoes, box	25@45
Turnips	60@75

Citrus Fruits.

Valencias	3.25@4.50
Grapefruit	3.00@4.00
Lemons	1.50@5.50
Limes, Mexican	5.00@5.50

Fresh Fruits.

Apples, Gravensteins	75@1.60
Apples, Beilefleurs	80@1.00
Apples, Newtons	1.00@1.25
Cantaloupes standard	40@1.40
Cantaloupes, Rivers	80@1.00
Nutmegs, large, crate	25@50
Figs, layer, single	25@60
Grapes, Thompson Seed., crate	40@50
Grapes, blk	40@50
Grapes, Muscat, box	40@50
Grapes, Tokay	25@40
Pears, box	75@1.15
Peaches, box	40@1.15
Plums, box	40@75
Prunes, German, box	65@75
Quinces, box	60@75
Loganberries, chest	4.00@6.00
Blackberries, chest	5.00@6.00
Raspberries, chest	4.00@8.00
Strawberries	3.00@5.00
Pineapples, Hawaiian	2.00@3.50
Bananas	1.00@1.50
Watermelons, doz	1.25@2.00

Dried Fruits.

FRUITS—1911 crop, f. o.b., carload lots, per lb.—Apples, 9@11c; Apricots, 14@17c; Peaches, 9¼@11c; Prunes, bulk basis, 5¾@7c; per lb., 4¾@10c, with a premium of ½@1c on large sizes; Figs, 5@6c for White; Pears, 10@13c.

RAISINS—1911 crop: Seeded, per pkg.—Fancy, No. 16, 7¼c; Choice, No. 16, 7c; Loose Muscatels, in 50-lb. boxes—Standard, 4-crown, 6⅛c; do, 3-crown, 5½c; do, 2-crown, 5¼c. Seedless—Muscatel, 5¼@5½c; Sultanas, 6@6¼c; Thompson's 7@7½c.

Nuts.

Walnuts, No. 1 soft shell	16@16½
Walnuts, No. 1 hard shell	14½
Almonds, '10, N P U	16@16½
Almonds, '10, Nonp	18@18¾
Almonds, '10, I X L	16½@17¼
Pecans	14@17
Chestnuts, California	6@8
Peanuts	5@5½

Beans Dried.

Limas	5.00@5.20
Pink	4.00@4.10
Black eyes	4.50@5.60
Small white	3.75@3.80
Large white	3.60@3.70
Kidneys	5.25@5.35
Garbanzos	3.00@3.25
Bayou	3.75@3.90
Horse beans	2.60@2.75
Red Mexicans	5.25@5.40
Cranberry	3.30@3.75

Hops

Hops, coast, 1910	28@30
Hops, 1911	34@37
Hops, Oregon, 1911	34@37

Honey.

Water white, comb, '11	15
Dark comb	12½
Extracted white, '11	9@10
Extracted dark	6½
Beeswax, lb	24@30

Hay.

Scott, Magner & Miller say:

Receipts of hay for the week have amounted to 4050 tons, which is about the same amount that we received the week previous. The bulk of this hay arrived by water, and consisted very largely of alfalfa hay and some ordinary grain hay. There has not been much horse hay of good class coming by cars for the reason that there is so little comparatively left in the fields of such hay.

The grain market has advanced again, and both oats and barley are selling on a higher basis than at any time during the season. The fact that grain has advanced so steadily has naturally had an influence on the hay situation for good varieties of hay, and while our market has not as yet responded to these conditions to any extent, the feeling appears to be along these lines.

Do your cows milk hard? Send 50 cents for teat expander. O. J. Weber Co., 225-227-229-231 East Sixth St., Los Angeles, Cal.

Fancy wheat hay in 200-pound bales is now being taken from the warehouses to supply the current light demand for this class of retailing hay; such offerings command our topmost quotations. Fancy red oat hay is not being shipped in at present for the reason that all of this variety of hay is under cover and must be taken from the warehouses to supply any demand that requires this class of hay. It is unusual to see hay taken from the warehouses so early in the season, as all such hay must bear the high costs of warehousing.

Fancy wheat hay	19.00@20.00
No. 1 wheat or wheat & oat	16.50@17.50
No. 2 wheat or wheat & Oat	13.00@14.00
Choice tame	15.00@16.00
Other tame oat	10.00@13.00
Wild oats	10.00@12.50
Stock hay	5.50@6.00
Alfalfa	9.00@11.00
Straw, bale	60@70

Grain.

Wheat	1.45@1.47½
Barley, fancy	1.71¼@1.72½
Barley, good to choice	1.67½@1.70
Barley, poor to fair	1.57½@1.65
Corn	1.60@1.62
Oats, red	1.70@1.75
Rye	1.47½@1.52½
Mustard, brown	5½
Alfalfa seed	18
Millet	3@3½
Flaxseed	5@5½
Broom corn seed, ton	30.00

Feed Stuff

Alfalfa meal	17.00
Bran, ton	28.00@29.00
Feed cornmeal, ton	38.00@39.00
Cracked corn	38.00@39.00
Rolled barley, ton	34.50@36.00
Rolled oats, ton	31.00@32.00
Middlings	32.00@34.00
Oil cake meal	42.50@43.50
Cocoanut cake, ton	24.00@25.00
Mixed feed, ton	25.00@27.00
Shorts	29.00@30.00

Deciduous Fruit Market

F. B. McKevitt, general manager of the California Fruit Distributors, reports:

Sacramento, Cal., Sept. 30, 1911.

The following gives the number of cars of deciduous fruit shipped from all points in California for the week (seven days) ending Friday morning, September 29, 1911:

Peaches—25 cars. The peach movement during the past week has been about the same as for the preceding one. Principal supplies are coming from the foothill districts and from Vacaville. They will continue in fair supply for probably another week. Quality is particularly fine.

Plums—3½ cars. Scattering shipments are still offering, and may continue for a few days longer.

Pears—45¾ cars. Not quite as many cars shipped this week as last. The coming week will probably show still further reductions. Winter Nellis is the principal variety still available. Quality of fruit is first class.

Grapes—480¾ cars. Movement of grapes seems to be nearly stationary, as there has been practically no change during the past three weeks. Shipment from Lodi has dropped to very small volume owing to the very low prices prevailing. Quality of the output from this section has steadily improved from the beginning, and now seems as near perfect as it is possible for grapes to be. Abundant supplies are still available. Cornichons and Emperors are developing in first class shape and promise to be of better quality than before for some years. It is not likely that any appreciable quantity of either variety will be shipped until the Tokay movement is done.

Weather conditions continue favorable. Light showers fell in two or three sections of the State during the week. Grape sections have so far entirely escaped damage. Storms may be expected, however, at any time

Comparative statement of shipments for season up to September 23, 1911:

	1910	1911
Cherries	250½	216¼
Apricots	289¾	214½
Peaches	2502¾	1947¼
Plums	1552½	1353¼
Pears	2312	2088½
Grapes	2578½	2581½
Sundry	10	3¼
Total	9496	8404

Citrus Fruit Market

LOS ANGELES, Oct. 4, 1911.—The demand for Valencias is even better than last week, prices on regular sizes now running $4.25 to $4.50 delivered. The market is kept fairly well cleaned and the few yet remaining will be closed out at good prices before Nov. 1st.

There is no particular change in the lemon market but all offerings, even in the farther eastern markets, are quickly picked up at prices in advance of the foreigns.

Shipments.

Shipments of oranges since Nov. 1st, 1910, aggregate 36,233 cars; of lemons, 6,457 cars, or a total of citrus fruits of 42,690. To same date last season 24,898 cars of oranges, 4,601 of lemons, or a total of 29,499 cars.

NEW YORK, Oct. 2.—Seven cars oranges, one car lemons sold. Showers, unsettled weather.

VALENCIAS—	Avge.
Old Mission, Chapman	$6.20
Golden Eagle, sd, Chapman	4.45

Cream Separators, all sizes and prices. O. J. Weber Co., 225-227-229-231 East Sixth Street, Los Angeles.

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CAUSTIC BALSAM

A safe, speedy and positive cure for

Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

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a big knee like this, but your horse may have a bunch or bruise on his Ankle, Hock, Stifle, Knee or Throat.

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Before After will clean them off without laying the horse up. No blister, no hair gone. $2.00 per bottle delivered. Describe your case for special instructions and Book 8 E free.

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For sale by Langley & Michaels, San Francisco, Calif.; Woodward, Clark & Co., Portland, Ore.; F. W. Braun Co.; Brunswig Drug Co., Western Wholesale Drug Co., Los Angeles, Calif.; Kirk, Cleary & Co., Sacramento, Calif.; Pacific Drug Co., Seattle, Wash.; Spokane Drug Co., Spokane, Wash.

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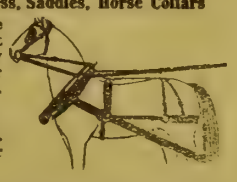
Your dealer has our catalogue



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Clown, Sparr Ft. Co..... 5.05
Circus, Sparr Ft. Co..... 4.20
Glendora Heights, A. C. G. Ex..... 5.30

CLEVELAND, Oct. 2.—One car Valencias, one car lemons sold. The market is very strong. Cold, cloudy.

VALENCIAS—	Avge.
Carmencita, S. T. Placentia	$4.60
Colombo, S. T., Placentia	4.00

CINCINNATI, Oct. 2.—Cool. Market steady. Car Honduras oranges sold, $2.15.

PHILADELPHIA, Oct. 2.—Two cars Valencias, one car lemons sold.

VALENCIAS—	Avge.
Pioneer, A. C. G., Azusa	$3.30
Tustin Gem, Tustin P. Co.	4.30

PITTSBURGH, Oct. 2.—One car sold. Very steady on oranges. Weather unsettled.

VALENCIAS—	Avge.
Squirrel, A. H., Prenda	$2.95

BOSTON, Oct. 2.—Six cars sold. Cold, raining. Steady on oranges, higher on lemons.

VALENCIAS—	Avge.
Pet, S. A. Ex.	$4.05
Pointer, A. C. G., Glendora	2.80
Orchard, or, National O. Co.	4.40

ST. LOUIS, Oct. 2.—Cool, raining. Market strong on Valencias.

VALENCIAS—	Avge.
Stag, A. C. G., C. Oak	$5.10
Hunter, A. C. G., C. Oak	3.85
Pointer, A. C. G., C. Oak	3.90

Legal

Edw. L. Payne, attorney, 301-304 Douglas Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Payne is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Injury in Pasture.

If A has pasture with deep ditches running through it, and takes in stock from B, B knowing of those ditches, and B's stock is later injured, is A responsible?—Subscriber.

A is liable to B if he fails to use ordinary care to protect the stock of B from injury, but B is also required to be ordinarily careful in the selection of the place to put his stock, and if he knew the pasture was dangerous, I am of the opinion that he cannot recover from A for injuries resulting from the danger that B knew existed. —E. L. P.

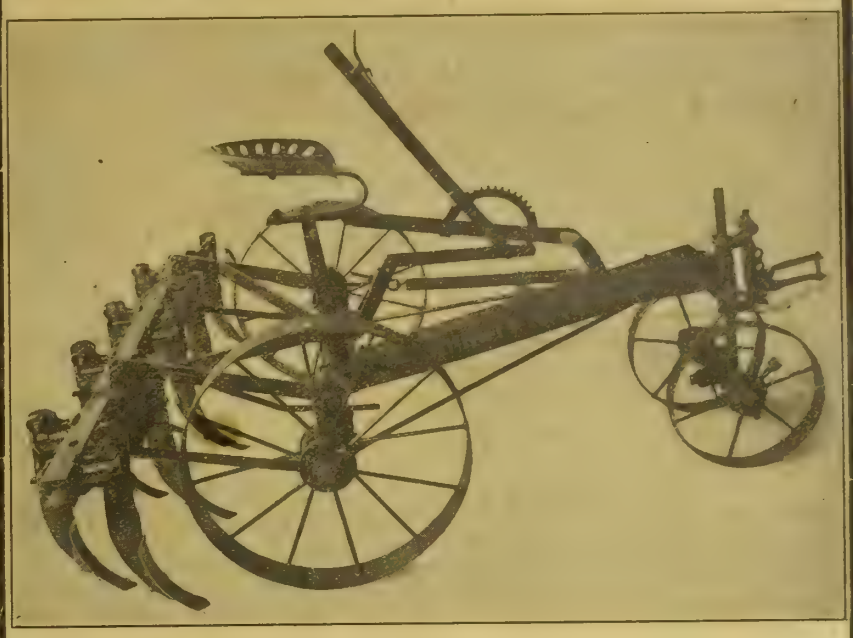
DRAFT HORSES.

(Continued from Page 320.)

then neglected all the rest of the year is not a good one. The horse should work the same as any other horse and made to digest his barley by the labor he does. Then too he is not a wild animal, but an affectionate beast that loves to be talked to and made much of. So do not tie him up in a box stall by himself. Good, sound hay should be the basis of his feeding and when on duty a mixture proportioned of a thousand pounds of rolled barley, five hundred pounds of bran and fifty pounds of oil meal mixed should be given as a feed. Begin by feeding him two quarts at a feed and increase it, but do not exceed twelve quarts a day at three feeds, as it is pushing him too hard. A cutting of green grass or a bran mash once a week will keep him in tone. The horse on feed like this must have at least ten miles of exercise a day or be worked in a wagon at chores. Never feed a draft horse and let him stand in the stable or he will go down to his death from overfeeding. There are few men that have owned horses that have not killed some by overkindness in feeding. The horse comes to the door and never did he look better nor did he frisk off more joyfully. A short quarter of an hour and the horse begins to sweat and roll in his gait, staggers and falls. In a short time his hind quarters are paralyzed. The horses rarely recover from this trouble and it is of quite frequent occurrence in the stable where good horses are kept. The poorer horses on the ranch are not as heavily fed and it is not long before some smart fellow will tell you that he does not wish good horses, as they are more delicate than scrubs. M. E. Sherman.

"Buy the Best Milk Producer in the world, sugar beet pulp at 50 cents per ton, of Los Alamitos Sugar factory."

The Arnott Improved Orchard Cultivator



WE are pleased to be able to announce that prompt shipments can now be made of the New Arnott Cultivator as shown above. This has been for years the most popular cultivator in the Southwest and with the New Fore Truck it is way in advance of any other orchard tool.

Sold by Leading Dealers everywhere, or write us direct if your Dealer cannot Supply you.

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There is money in
SUGAR and CATTLE

Share in the profits of an agricultural investment, comprising over 21 square miles of rich agricultural lands.

The land has an abundance of water in a district where irrigation, drought and frosts are unknown. Large tame grass pastures have just been prepared.

The land is free from incumbrances, which affords our investors the highest degree of security.

THE PRODUCTS OF THE RANCH ARE CATTLE AND CANE SUGAR, TWO OF THE WORLD'S BIGGEST DIVIDEND PAYERS, AND ON WHICH THE MARKET IS STEADILY ADVANCING.

In this district lean cattle fatten in four months in tame grass pastures and increase 50% to 100% in value.

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Additional capital is required for improvements and to buy cattle to stock the ranch. A limited amount of investment certificates will be issued in units of $100 cash or on installments. Six per cent per annum interest is guaranteed, and we also share the profits with you. Option given to withdraw your money and profits or to become a part owner of this great property.

Applications for certificates will be filed in the order received. This enterprise is backed by some of the most substantial and well-known business men of Los Angeles. We invite the strictest investigation.

Send for free booklets and descriptive literature.

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Ask Your Dealer to Show It to You or Write for Booklet Describing It Fully

Patents Pending

Ordinary Bolster Springs, when Fitted on a Common Wagon:

1st. They raise the bed too high, making it hard to load. 2nd. It is difficult to put hold-down irons on a wagon so equipped. 3rd. There is nothing to prevent the bed from lurching ahead when chuck holes are struck. 4th. The spring, until loaded to just about the right point, does not commence to give—a few hundred pounds past this point and they flatten down.

On Our Spring Bolster Wagon with Equalizing Device:

1st. The bed is no higher than on a gear without springs. 2nd. The steel bolster standards have holes for bolting direct into bed stringers—no hold-down irons are needed. 3rd. The brace from the front bolster to the reach prevents lurching. 4th. Spring acts at all times, empty bed, half load, or full load makes no difference. 5th. Price of gear with the springs built in is about the same as ordinary gear.

Fresno Implement Co., Fresno, Cal.

Give the Pomona Patent Pressure Gate a Trial

No rubber or wooden facing to rot or wear out. Absolutely water tight when closed. Locking mechanism is protected against rust or clogging with sand or dirt. Simple in construction. Cheap in price and as durable as solid iron.

THE LOCKING DEVICE is the simplest made, merely a tapering screw with split tapering nut socket. It locks the cover in any desired position or locks the faces, making an ABSOLUTELY WATER TIGHT JOINT.

TWO FOOT HANDLE FURNISHED WITH EVERY PRESSURE GATE FREE.

ALSO A FULL LINE OF CIRCULAR VALVES FOR ORCHARD AND ALFALFA IRRIGATION CARRIED IN STOCK.

Write for descriptive circular and price list.

POMONA MFG. CO.
POMONA, CAL.

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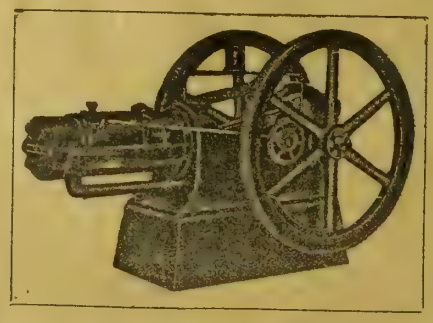

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2-H. P. $75.;
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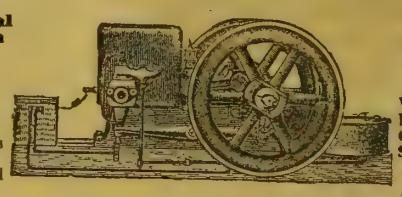
Guaranteed for 5 years to deliver the actual horse power as stamped on the name plate.



An up-to-date engine; snappy, vigorous and powerful. Simple, reliable and durable.

WHY PAY HIGHER PRICES WHEN WE CAN GUARANTEE SATISFACTION.

Write for particulars, stating size wanted.

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IRRIGATION PROBLEMS

The continual cleaning-out of weedy ditches is but one of the disagreeable and expensive features of the old-style Irrigation Methods.

Why waste time and money in this way, or in costly experimenting, when the experience and advice of Irrigation Experts is yours for the asking.

The ***"K T System"*** will solve this, and all your Irrigation Problems. Just ask for the 6th Edition of our Brown Book (*free*).

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The Original R. I. Knapp Side-Hill Plow

Orchard and Vineyard Plow received first premium at State Fair.

If you cannot get our plow send us the name of your dealer and we will see that you are supplied. Has given entire satisfaction for over thirty years. Equally as good for valley as hill sides. We manufacture five sizes—from one-horse orchard and vineyard plow, to the strongest grading plow.

SAN JOSE, CALIFORNIA **H. G. KNAPP & SON**

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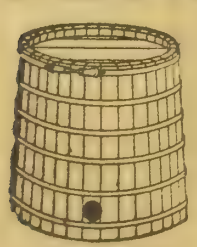
GEO. WINDELER, Prop.

Water Tanks, Wine Tanks made from carefully selected stock by careful and experienced workmen. "Tanks that are well made last a long time." It will pay you to get my prices before buying.



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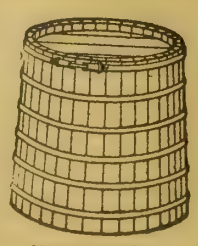
Geo. Windeler

144-154 Berry St., San Francisco, Cal.



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LOS ANGELES OCTOBER 12, 1911 SAN FRANCISCO

A View of Fitch Mountain and Russian River in Sonoma County

—By Courtesy Healdsburg Tribune.

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Merced Colony No. 2. Same soil, excellent location, abundant water, good drainage. Merced Colony No. 2 sold to California Farmers, men thoroughly acquainted with the soil and attendant conditions. Twenty sets of buildings already up. New settlers coming in daily. An ideal district for alfalfa, dairying and hog raising. Sweet potatoes, tomatoes, peaches and grapes thrive in the warm loam soil. Terms are easy. Write today for particulars concerning the new tract.

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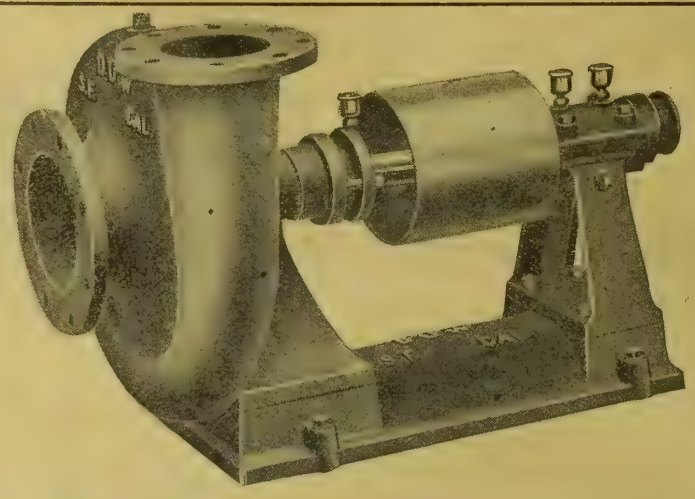

A Winter Garden

Of course, we all know that green vegetables can be grown the year around in California. But to do this requires water for irrigation.

This is the season to plant garden. If you have a pumping plant of course you are busy. But if you haven't? Plant garden anyway.

We carry a stock of pumps in San Francisco and Los Angeles. By the time your garden is in, your plant can be running. The cost is not heavy. In fact, if you figure the saving and extra profit from your ranch, the pumping plant will probably be paid for the first year.

Come in and talk it over. Remember, we have been building pumps for thirty-seven years, and we mean it when we say

DOW PUMPS

will pump more water for less money, and do it year after year.

GEO. E. DOW PUMPING ENGINE CO.

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Los Angeles

THE NAME IS A LUCEY GUARANTEE — **Do You Want a** — THE NAME IS A LUCEY GUARANTEE

Pumping Plant

That You Can Depend On?

Then it must be one that is designed expressly to meet your requirements, every part proven by time and service in other plants to be perfectly adapted to do the work it will have to do in yours.

This company is not committed to any one type or system of pumping, but we know the pumps that have given satisfaction and what their working conditions must be, and by means of this knowledge, can take your case, consider all its phases, then outline a plant that we know is bound to absolutely meet your requirements.

Our price will be either f. o. b. Los Angeles, or as we would prefer, installed complete at your well and in perfect running order and doing just what we have told you it would do.

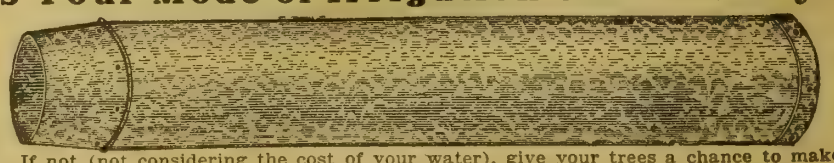
Write us your conditions fully or ask us to send you a card to be filled out. We will quote you a price, a good one, and remember it will cover a plant that you can depend upon.

J. F. Lucey Co.

Water Well Dept.
1493-9 E. Sixth St.
LOS ANGELES

THE NAME IS A LUCEY GUARANTEE — THE NAME IS A LUCEY GUARANTEE

Is Your Mode of Irrigation Satisfactory?



If not (not considering the cost of your water), give your trees a chance to make good by giving your orchard the proper amount of water all over same, and not three-quarters of your water supply within forty feet of your head flume.

The surface irrigating pipe we manufacture will remove this obstacle—will cut your water bill—is more convenient to use and will last a life time.

Write us, stating your requirements and we will cheerfully furnish you with prices and information desired.

We also manufacture Ells, Tees and Gates for this special pipe and are in a position to manufacture any special fittings you may require.

THE AMES IRVIN COMPANY Corner Eighth and Irwin Streets, San Francisco, California

We Raise other varieties of Citrus Stock but our

Eureka Lemon Trees are our Specialty

Before placing your 1912 spring order write to, phone, or visit

The Richardson Citrus Nursery

Phone Sunset 80 R 2 SANTA PAULA, CAL.

Complete Pumping Plants

We select, purchase and install, **Guaranteeing Satisfaction** for our clients

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California Cultivator

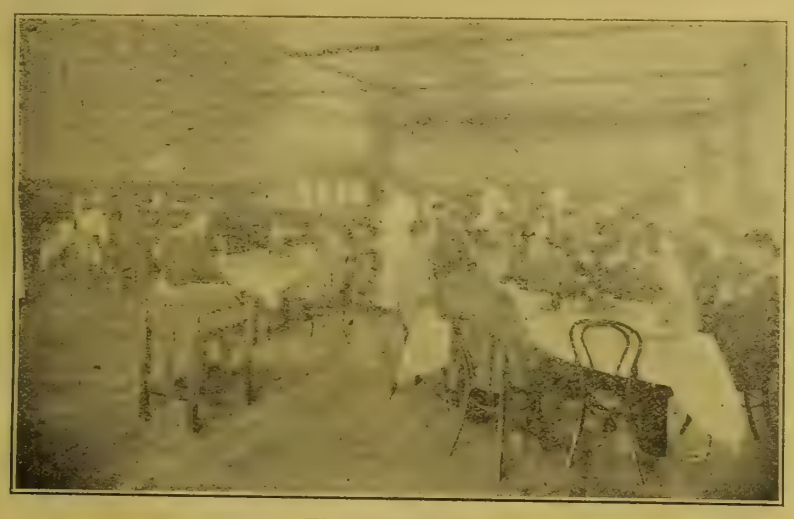
Vol. XXXVII. No. 15. LOS ANGELES: THURSDAY, OCTOBER 12, 1911 One Dollar the Year

Spending a Day in a Modern School

Not the One Surrounded by Mayweed, but One Far More Modern in Its Appointments. The State Polytechnic School at San Luis Obispo is a Credit to the State. Editorial Correspondence.

The dreary school house located on an extremely small corner of a pasture field, and around which there was neither shrub nor flower other than Mayweed, in which the writer learned his A B C's, was recalled one day recently when he was taken over the spacious grounds of the California Polytechnic School in San Luis Obispo. The recalling of old days was because of contrast, not similarity of condition. Instead of the cramped grounds barely affording room for the "gravel" building, the buildings, of which there are several, are located in extensive grounds of 310 acres. Instead of the Mayweed, cultivated flower-beds, well cared for lawns and even plants from the tropics in glass houses were shown. The 310 acres, however, are not all used to add beauty to the school grounds, but are of the greatest utility in that they were used to aid in the education of some 173 California young people during the past year. To be strictly correct, only a portion of the 173 have used the grounds, that is, while it is largely an agricultural school, many are taking mechanical work and many others in the girls' classes are taking special cooking or other manual training courses. This school was established by an act of Legislature in 1901, the government being vested in a Board of Trustees consisting of the Governor, Superintendent of Public Instruction, and five others to be appointed by the Governor. It is located on high grounds overlooking the little valley in which lies San Luis Obispo, and affording a view which is an education in itself. It is but a few miles from the Pacific ocean and almost perfect climatic conditions are given the year round. Adding to the beauty of the outlook the rolling nature of the farm itself gives opportunity for most beautiful effects in landscape gardening. These have been improved upon to a certain extent and will be more and more as the years pass. The rolling nature of the farm does not give the most typical farming conditions. However, there is sufficient level land for any practical experiment work needed by the students.

Judging Stock at the School.



The Dining-Room.

The writer was driven over the farm by Mr. I. J. Condit, Instructor in Botany and Horticulture. It was the day after graduation of this year's class, and the Director, Prof. LeRoy B. Smith, found himself in a mass of "unfinished business" which he was endeavoring to clean up. However, the keys of the farm were turned over to us and it was a most interesting day in which comparisons were made between methods of education today and 35 years ago.

There is a main administration and class-room building, household arts building, a girls' dormitory, boys' dormitory and a commodious dining hall, forming the central group of buildings.

In less sightly locations are placed the creamery, shops, laboratories, dairy barns, swine yards, poultry yards and horse stables. Pure bred stock is kept on the farm and methods of judging and care of the stock is taught by practical work under the supervision of thoroughly qualified instructors.

We may note one "class-room" in the household arts building which might impress some practical hard-headed farmer as somewhat superfluous in the scheme of modern education. The room was finished as a typical good-sized dining room in a modern home. A large dining table, sideboard with china, plate rails neatly decorated with other pieces of china, and cupboards filled with linens were the factors in the room. In this room is given practical demonstration of proper serving of a meal. Each girl taking the course in household arts is expected to entertain her classmates once each term at a course luncheon, and for that purpose this room is at her service. Her entertaining is under the direction of a competent instructor and she is taught the nicer little things in the art of entertaining. Other lessons given to the girls in addition to the "Three R's" and some of the sciences are free hand drawing, sewing and dress-making, domestic science, sloyd, millinery, gardening, home management, botany, etc.

It is practically a high school course but does not accredit to the State University, but it offers a most excellent opportunity for the young of the state for a practical education.

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If you contemplate planting of Citrus groves this season you should get our prices.

Every Tree True to Name

Remember our 21 years of experience of propagating and growing Citrus Trees enables us to grow the most desirable varieties for planting, and we guarantee every tree true to name.

We can fill orders in any quantity of all the Standard varieties.

Our booklet, entitled "Citrus Fruits" mailed to any address on receipt of 25 cents; credit given for this amount on first order.

Write us today for prices and information. All correspondence most cheerfully answered.

San Dimas Citrus Nurseries

SAN DIMAS, CALIFORNIA

Good Citrus Trees

Expert grown clean stock, up to size now, for immediate or next season delivery. Nothing better anywhere. Buds selected with greatest care, and positively guaranteed true to name.

250,000 Seed Bed Stock

Sour, Sweet or Pomelo—the McMillan grown kind—large clean plants from selected seed—the kind it pays to plant. Inspection and correspondence invited.

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Growers of Citrus Trees exclusively
Ten years in business and here to stay

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Equivalent to 128-129% Cyanide Potassium, for generating Hydrocyanic Gas

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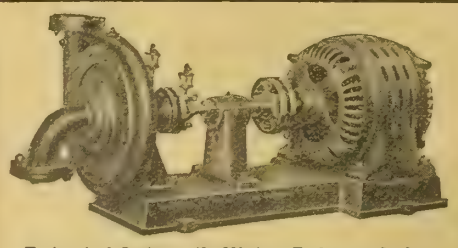

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They are absolutely noiseless and have neither rods, valves nor gears to get out of order.

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Established in 1855 Correspondence Invited

Citrus and Tropical Fruits

A GREAT ORGANIZATION.

The California Fruit Growers Exchange has become so much of a factor in California marketing operations that we often regard it as commonplace and in the regular order of things, but occasionally it is well to take a look at it from the standpoint of one not directly engaged in the citrus fruit industry, so we give a quotation from a daily newspaper showing how this organization looks to an outsider. The article appears in connection with report of an annual meeting and election of officers for the coming year. The paper says:

"Former officers have been reelected by the stockholders of the California Fruit Growers Exchange. The stockholders of the exchange are the 16 subexchanges, and they, in turn, are made up of the local associations.

"Each subexchange holds only one share of stock, and the California Fruit Growers Exchange therefore has outstanding only 16 shares of stock, at a par value of $100 each, and it pays no dividends; yet in the last year it handled fruit to the value of approximately $20,600,000.

"The directors chosen for the coming year are as follows: Representing the Associated Fruit Exchange, Highgrove, Josephus Hudson; A. C. G. Fruit Exchange, Azusa, W. C. Hendrick; Arlington Heights Fruit Exchange, Riverside, W. G. Fraser; Covina Fruit Exchange, W. M. Griswold; Duarte-Monrovia Fruit Exchange, Duarte, M. R. Williams; Ontario-Cucamonga Fruit Exchange, Upland, H. E. Swan; Queen Colony Fruit Exchange, Corona, S. B. Hampton; Ventura County Fruit Exchange, Santa Paula, C. C. Teague; Redlands-Highlands Fruit Exchange, J. S. Edwards; Riverside Fruit Exchange, A. P. Johnson; San Antonio Fruit Exchange, Pomona, Fred J. Smith; San Bernardino County Fruit Exchange, San Bernardino, E. F. Van Luven; Semi-Tropic Fruit Exchange, Los Angeles, F. Q. Story; Sunset Fruit Exchange, Orange, H. E. Huff; Tulare County Citrus Fruit Exchange, Porterville, K. H. Plate; Central California Fruit Exchange, Lindsay, D. G. Overall.

Alhambra Man President

"F. Q. Story of Alhambra is president of the general exchange, B. A. Woodford of Claremont is general manager and secretary, but he is not a member of the board of directors.

In the seven years that the exchange has been organized it has sold nearly 50,000,000 boxes of fruit for its members, bringing to them nearly $90,000,000, an average of $1.80 a box on board the cars in California, for the entire time. The following shows the amount handled by the organization each season and the aggregate and average returns per box:

Year	Boxes	Aggregate	Ave.
1904-5	5,188,511	$7,124,377	$1.37
1905-6	4,705,515	9,936,497	2.11
1906-7	6,149,708	12,268,752	2.00
1907-8	6,628,644	11,753,544	1.77
1908-9	8,710,828	13,958,990	1.60
1909-10	7,578,801	14,831,975	1.95
1910-11	10,842,831	20,579,560	1.89
Totals	48,804,838	$89,453,695	$1.80

Returns Not All In.

"The figures of the aggregate returns for the present season may vary a trifle, as the returns from recent cars sold are not all in, but the variation will be scarcely appreciable, if any.

"This total business of nearly $90,000,000 in seven years has been transacted with a loss of less than $6000 through failure to collect or in the transmission of funds—a remarkable showing. This is only one dollar out of every $15,000 worth of business, or perhaps two 2-cent postage stamps for each carload.

"The exchange also has done a large amount of subsidiary business incidental to the citrus industry. It has furnished the local associations with 2500 cars of box shook in the last year, or an average of eight cars for every working day in the year.

"Thin as an orange wrapper is, it required 150 carloads to supply the exchange last year. This would make more than a mile of freight cars filled with nothing but orange wrappers. The one item of nails to make the boxes would fill a solid train."

* * *

In this connection it may be in order also to give a bit of history of this great organization as published in the last year book of the Department of Agriculture. It was written by Mr. G. Harold Powell who referred to his connection with this organization as a great pleasure and an occasion for pride because it is making history in the handling of fruits as has no other organization in the world. This has been deemed worthy of reprinting and has been issued in a separate slip. The reference to the Exchange given below is only a small part of the year book article.

The Organization of the Citrus-Fruit Industry of California.

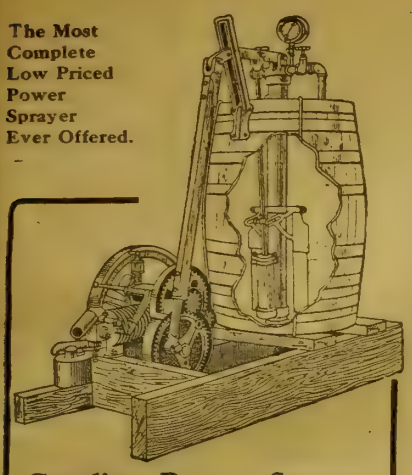
"The citrus fruit industry in California, which has developed commercially since 1873, when the Washington Navel orange, originally grown in Brazil, was sent to Riverside by the United States Department of Agriculture, represents an investment of 150 to 175 million dollars. The annual shipments of oranges and lemons have reached the enormous total of 40,000 to 50,000 carloads, with a value in California estimated to vary from 20 to 30 million dollars. Between 125,000 and 150,000 acres have been planted to citrus fruits, and from 100,000 to 150,000 people depend on the industry for a livelihood.

"The industry is localized largely in Southern California, though it is extending rapidly in the interior valleys to the north. No other horticultural industry in the United States of equal extent is so compactly located. None presents more difficult problems or requires a more skillful distribution and marketing of the crop. Oranges and lemons are distributed from California practically every day in the year for distances of thousands of miles to all of the important cities and towns in the United States and Canada, and some are exported to other countries.

"When the industry was small no complicated problems of distribution or marketing faced the grower. The fruit was sold for cash to buyers on the ground or to brokers who represented distant commission houses or other interests, or it may have been sent direct to a commission firm in some far-away city. As the industry grew larger and there were several thousand carloads of fruit to sell, the grower began to realize that the systems of selling the fruit already in operation were inadequate to bring to him the proportion of the returns which his capital was earning and to which he considered himself entitled. Under the system in operation there were frequent gluts in a few of the markets and apparently no effort among the buyers to equalize the distribution of the fruit geographically or throughout the year. The buyers were said sometimes to have fixed the maximum price which would be paid the grower and to apportion the citrus fruit area into districts so as to reduce competition among themselves. The result was disastrous to the producer and became so serious in the early nineties as to threaten to wipe out the capital invested in the industry.

"About this time the growers began to organize small associations for the purpose of preparing the fruit for shipment, and in order that it might be assembled in quantity and sold for cash or shipped as a unit. Mr. T. H. B. Chamblin, of Riverside, was the pioneer in organizing the citrus fruit growers in Southern California. The Pachappa Fruit Association was the first one formed, about 1888. A number of these growers' associations were soon formed, and in 1893 a plan was outlined by Mr. Chamblin, and finally adopted in principle, which federated a number of the associations and provided for the preparation of the fruit for market by the local associations, for the organization of district exchanges to be made up of the local associations, which were to receive orders for the fruit and apportion them among the associations, it being the

The Most Complete Low Priced Power Sprayer Ever Offered.



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It is a book issued annually and is filled with new and practical information. The valuable reference tables will be very useful to you in your work about the house, the orchard or on the farm.

IT'S FREE

The completely revised 1911-12 issue is ready now to send to you. A postal will bring it.

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Largest Manufacturers of Fertilizers, Poultry Foods and Bone Charcoal on the Pacific Coast.

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See Big Auction Ad on Page 358

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Make Big Money Drilling Wells

IMPROVED STANDARD DRILLING MACHINE
One Man Can Handle
Has a record of drilling 130 feet and driving casing in one day. Only three levers. Extra large rope sheaves. Positively will drill every kind of formation. Avoid delays from sending back East. Buy from us. We build these up-to-date machines. Will tell you all in catalog. Write for it.

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Why not buy the best? 2 year old sweet stock all first class, clean, and well rooted. 25,000 one-year Sour Seed Bed Stock 8 in. and up.

T. J. LOCKE

Home Phone, Black 177

27 N. Stoneman Ave. ALHAMBRA, CAL

A Farmers Institute was held at Dos Palos last Friday and Saturday.

intent at that time to ship only such fruit as was sold before picking, and the formation of an executive committee, made up of representatives from the district exchanges, to market the fruit.

"Out of this federation grew the Southern California Fruit Exchange in 1895, and later, in 1905, the California Fruit-Growers Exchange, which now handles about 60 per cent of the citrus fruits grown in California. There are many other associations of growers not connected with the exchange which are organized on the same general principles, and these associations, together with the exchange and a few large growers who market their own fruit, handle about 85 per cent of the citrus fruit crop.

"In order that the principles which underlie the largest co-operative fruit-marketing organization in the United States may be understood, a brief outline of the exchange system follows:

"The California Fruit Growers Exchange represents about 6000 growers who have organized themselves into 100 or more local associations. The association usually owns its own packing house, where the fruit of the members is assembled, pooled, and prepared for market under brands adopted for the different grades by the association. The association usually picks the fruit of the members.

"The associations in the different regions combine into one or more district exchanges which represent the associations in the business operations common to each and which sell the fruit in co-operation with the California Fruit Growers Exchange through the district or local agents of the latter or at auction, receiving the proceeds therefor through the California Fruit Growers Exchange, an incorporated agency formed by a representative of each of the sixteen district exchanges, which acts as the selling agent for these district exchanges. The California Fruit Growers Exchange takes the fruit of the district exchanges after it is packed and with their advice places it in the different markets, sells it through its own exclusive agents to the trade or by auction, and collects the proceeds and transmits them to the district exchanges, which in turn pay the growers through the local associations.

"The central exchange, the district exchange, and the association all transact the business for the grower at actual cost. The central exchange through its agents is in daily touch with the markets of America, thereby enabling it to distribute its fruit intelligently. The local exhanges and the associations receive a daily bulletin from the central exchange which outlines the condition of all the markets the preceding day, states the selling price of all exchange cars, and gives the growers such information as will help them to pack and distribute their fruit to the best advantage.

"The limits of this article are too restricted to permit more than a brief outline of the battle that the citrus fruit growers of California had to wage for fifteen years before the co-operative principle was on a firm foundation. At first, the growers were inexperienced in meeting the attacks of those who are opposed to co-operation among the producers. Powerful financial interests of various kinds were arrayed against them and were organized to oppose them. Vicious attacks were made on the integrity of the officers. The results obtained by the associations were belittled, the growers' association contract was assailed in the courts, and the methods of marketing the fruit were attacked. The most determined efforts were made to show that the growers' associations were illegally formed. Finally the growers combined with the buyers at one time to market the entire crop, but this incongruous combination of producers and dealers was dissolved at the end of a year and a half.

"The history of the citrus industry in California is largely a record of the progress in the co-operative handling and distribution of the crop by the producer and of his determination to receive an equitable share of the value of the labor expended in its production. The battle has been won; the co-operative principle is firmly fixed. It is the balance wheel that gives stability to the industry and to the relations that exist between it and the agencies with which it transacts business.

(Continued on Page 357.)

WARNING

To the Orange Grower

Insist on using only

Sulphuric Acid

made from Pure Virgin Sulphur when your trees are fumigated.

Acids made from waste fumes of the smelters contain arsenic, lead, copper and nitrous fumes, which are exceedingly dangerous to your trees, and may cause you no end of trouble.

Insist on using

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The continual cleaning-out of weedy ditches is but one of the disagreeable and expensive features of the old-style Irrigation Methods.

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Fifty Thousand High Grade Trees

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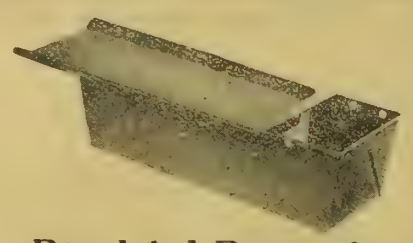

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Does Not Explode.

Most Powerful, because of large fuel and heat capacity.

Fire controlled, therefore economical, saving fuel and labor.

Made of heavier steel and are more durable and longer lived.

Fire Control Advantages

Burns oil in proportion to frost conditions. Just slide the cover to control the fire.

Will Maintain a Uniform Temperature; Fixed Fire Heaters Do Not.

The most value for the money. Cheapest per acre, because less number of units are required, made possible by fire control.

Reservoir Features

3 and 6-gallon capacity. Requires less often to fill.

Construction

Cover sliding on, cannot blow off. By closing covers, fires are put out. Seamless—no seams to leak. Won't tip or spill contents,

and numerous other features we would like to tell you about. Send for our ***Red Book.*** If interested, get a sample heater and satisfy yourself of its practicability and its good qualities. We can substantiate our claims of efficiency by references to many satisfied users. ***We have territory open for a few live agents. Write and get our terms.***

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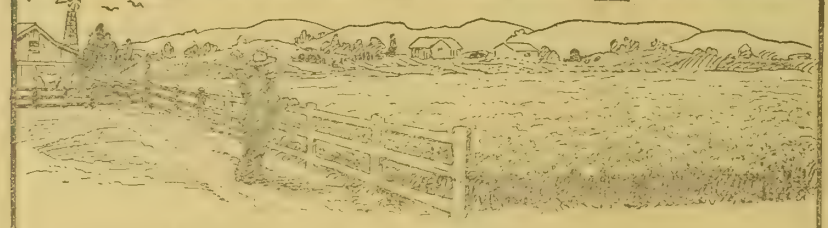
THE LAND'S FULL YIELD.



Seed for Alfalfa is a small item in dollars and cents, but the difference in crops is the difference between success and failure, depending upon the selection of seed.

The weevil trouble in certain seed-growing sections is known to all experts, but our buyers have avoided all possible complaint by purchasing a stock of

ARIZONA ALFALFA SEED

This seed is triple cleaned and comes from a hardy, small-stemmed, full-foliaged stand. It is dodder free and altogether as fine a lot of seed as we ever handled. Write for prices.

A FIFTY PER CENT. LARGER TONNAGE of Alfalfa can be grown by inoculating with **"Farmogerm"** at a cost of only $2.00 per acre. No progressive farmer should miss reading our Farmogerm booklet—mailed free.

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Selected Buds on Vigorous Roots

Our trees always prove true. Send for Catalog.
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POLLARD BROS.

Alhambra Ex. Main 13, or Black 183 — Corner Mission Street and Los Robles Ave. — **South Pasadena, California**

When writing advertisers, mention Cultivator.

The Night Before in the Apple Show

The State Apple Show at Watsonville Starts With a Rain Storm, as Did Last Year's. High Quality of Apples Shown, but Exhibits Not So Extensive as Last Year. Editorial Correspondence.

The exposition building is indeed a busy place. It is "the night before" and hundreds of hammers are knocking, but the workers are not, for they're too busy with finishing off their exhibits. The work is not so far advanced as last year on this day. The exhibits are not so extensive, but quality—uniformly higher quality—prevails. It's a beautiful show; much more so than last year.

There are only ten full car exhibits, while last year there were fifteen. But, say, did you ever see ten cars of apples, almost perfect apples, stacked up on exhibit? It's a sight. There is one car of Red Pearmains—beauties, every one—which makes one almost thrill at the sight.

But this is only an advance word. I will send Cultivator readers more particulars next week.

There are ten full carload exhibits, twenty 100-box exhibits, thirteen 50-box, twenty-seven of 25 boxes each, seventy-three of tens, 133 of fives, 187 ones, and 1,728 plate entries. Of evaporated apples there are 320 fifty pound box and 180 twenty-five pound box exhibits. There are nine barrels of vinegar and some cider, which is constantly decreasing by new "entries."

The features are good, twelve of them. I will write of them and send photos of them for next week's paper.

The judges begin work in the morning, for all are on hand. They are: Geo. E. Rowe, Grand Rapids, Michigan; R. A. Stanton, Hood River, Oregon; A. P. Batcham, Mosier, Oregon; C. J. Sinsel, Boise, Idaho, and J. L. Dumas, Pullman, Washington.

Deciduous Fruit Culture

APPLES IN THE MOUNTAINS.

By John Isaac.

No form of fruit production has made more rapid growth over the whole of the Pacific Coast during the past few years than has apple growing. In California this is especially true. In the early days in this state, it was confidently asserted by everybody who had never tried it, that apples could not be produced here—at any rate they were of such poor quality that they could not be shipped and were nothing "like those we used to have on the old farm at home." And we accepted these statements on faith, because everybody said so. But there were sceptics, and these set out apple trees in different places, and it was finally demonstrated that there were vast areas of land in California where the apple would do as well as anywhere on earth. In fact, we have discovered that there are two vast stretches of country in this state especially well adapted to apple growth; that along the coast and within the range of the modifying temperature of the ocean, and that in the mountains at an elevation of 2000 and upward to 4000 feet.

The apple, to give best results, demands a cool, moist locality. It will not do well in the hot interior valleys, for while, even here, some varieties will bear heavily, they lack the high flavor and good keeping qualities of those grown under cooler conditions. It is for this reason that the coast apples have gained a reputation for quality. They are grown within the influence of the modifying breezes of the ocean, where the atmosphere carries a deal of moisture. That the coast counties have become the greatest apple producers of California is due partly to their climatic advantages, the superior quality of their soil for apple production, but perhaps, more than either, to the fact that they are close to lines of transportation and within easy reach of the markets.

The mountain valleys are better adapted to apples than the coast, and we know that is saying a good deal, but they have been outside the sphere of railroad influence. In the mountains the winters are somewhat cooler than they are either in the lower valleys or on the coast. The summers are not so hot, and the soil, as a rule, carries more moisture.

We may safely assert that the finest apples on earth can be grown in the mountain valleys on the Sierra Nevada. Perhaps other sections can produce some equally as good, but there are none better, and it is, therefore, safe to claim that they are the best. It is the high colored fruit, too, that gives best results. There is some quality of the soil that gives this result, and the finest red apples we have ever seen are those produced in the mountain valleys. Added to this high color are superior flavor and keeping qualities.

Mountain apples have many other advantages over those of the valleys. In many sections codling moths are as yet unknown, and spraying against this expensive pest unnecessary. In some of the mountain valleys, however, it is found to a small extent, but we are assured by one of the most successful apple growers in the mountains that even where it has been established for many years, it is not a serious pest; not over three to five per cent of the fruit is wormy, and this even without spraying. Our informant ascribes this condition to the work of some of our parasites which are native to the mountain vegetation, but which do not do as effective work in the lower sections.

Early fruitage and heavy bearing qualities are also marked characteristics of the trees in these sections, and some fruit can be expected within three years from planting, while a paying crop is pretty certain within four years. As to the profits of a mountain apple orchard, the market reports frequently show that fruit from these sections will sell at $2 to $2.50 per box while other apples command but 75 cents to $1.

In these valleys all, except the tenderest fruits do well as, in fact, does all vegetable growth, but it is in the

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Look on Page 358

Briggs & Weber

AUCTIONEERS

CALIFORNIA
Olive Oil
The Purest in the World
Send For Catalogue of Pure Food Products
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HUB (BRAND) Axle Grease

COSTS LESS
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The rub is in the hub.
But HUB saves the rub.

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In a BLUE PAIL Best for 16 Years

STAR PORTABLE DRILLING MACHINES

Drillers

Know best why they prefer a certain machine to any other make—it's not merely a notion. They want the one that will ***make the most hole*** in the shortest time, and with the least amount of trouble. They're exactly right.

Star Portable Drilling Machines

are conceded the standard for all Well Work, because of their construction, which guarantees them Economic, Speedy, Simple, Durable—the drillers' favorite.

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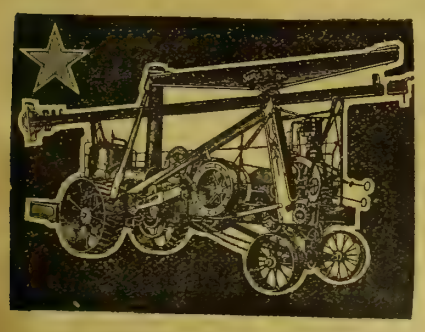

How About Stocking That Farm?

See Big Auction Ad on Page 358

Briggs & Weber
AUCTIONEERS

Colusa County levees are being strengthened and 26,000 acres of new land reclaimed.

apple that they excel all other localities, and it will be but a few years before California mountain apples will achieve a world-wide fame for their many superior qualities.

CROPS IN THE ORCHARD.

A question that is interesting and fascinating to the planter of fruit trees is this: Can the orchard be made to pay its own expenses up to the time of bearing without injury to future crops? If so, how? The answer we propose for discussion is, Yes, by means of well selected and well managed vegetable inter-crops.

Before we throw the question open, it might be well to outline some of the principles that govern the practice of successful inter-cropping in orchards.

To begin with, the grower must have a natural liking for the inter-cropping idea. One seldom makes a success of a practice that he does not like.

In the second place, care and attention needed by the orchard must not be detracted to other crops.

Third, the trees must not be robbed of plant food or moisture. Here we raise the most common objection to orchard inter-cropping, it being claimed that there is not enough for both. If we cannot supply plant food in quantities sufficient for the proper development of both crops, then by all means do not attempt to grow vegetables. Moisture is less easily controlled, but even here humus and cultivation are highly effective.

Fourth, we must not stir the soil late in the season, thus preventing proper ripening of wood by forcing it into new growth.

Fifth, we should choose crops that require but little outlay for special equipment, and which are light in their demands for labor.

Sixth, the question of markets and marketing must be considered with great care, for upon this the profits depend. In general, it is well to plant staple crops which may be sold always and everywhere.

Finally, we must consider the general adaptation of crop to orchard, having due regard for the lay of the land, soil conditions and harvest time.

With these points in mind, let us next consider the characteristics of the ideal crop for inter-planting. It is well to choose an early annual, of easy cultivation and ready sale. It should not be necessary to stir the soil late in the season in harvesting the crop.

Professor Stewart, of the Pennsylvania state college, holds that "From the standpoint of the trees, the least harmful are tilled leguminous intercrops, such as peas and beans, on account of their favorable nitrogen and moisture relations." Grass is generally regarded as highly objectionable, drawing upon the water supply of the soil. Early sweet corn is probably the best form in which to plant this crop. Melons, cabbage, tomatoes and early potatoes are used by many. But we must feed both the crops and the trees.—Paul Work, Cornell College of Agriculture, Ithaca, N. Y.

KEEPING CIDER SWEET.

The only satisfactory way we have ever found to keep cider sweet in kegs or bottles is to boil and skim it, canning it when at the boiling point and sealing securely. We have tried at different times such things as acids said to "keep it exactly as it was the day it was made," and have experimented with such preparations as horseradish and mustard seed, but found them all worthless. We like the taste of boiled cider and it is safe from alcohol when one wants it for mincemeat or for table use in the winter. We cannot say that it is as good as the fresh product, but it is safe and we use it freely. We simply bring it to a boil as soon as it comes from the press, skim and seal it in bottles or jugs and set it away in a cool, dry place. It keeps perfectly.—Farmer & Breeder.

And still thoughtless individuals will keep on throwing lighted matches into inflammable substances—as if it was really a difficult and expert achievement to blow out a match before throwing it away.

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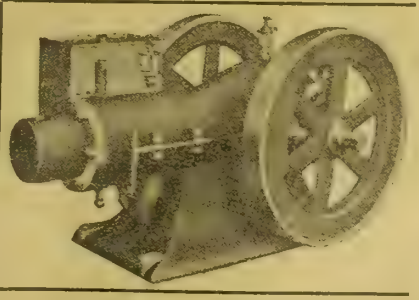

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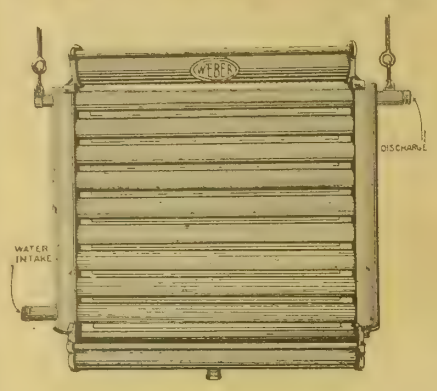

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RAISING HOGS IN THE SACRAMENTO VALLEY.

By H. L. Murphy.

The raising of swine in the Sacramento Valley offers a better opportunity to the man with small capital than any other industry. The man with a few acres may keep his hogs as well as the man with a thousand acres.

Give them an alfalfa pasture or alfalfa hay and a small ration of grain and most important of all, plenty of fresh water and a clean place to sleep. Don't expect to raise hogs successfully and let them wallow in mud and drink stagnant water, or they will soon have hog cholera. Did you ever stop to think that the hog's digestive organs are nearer to those of a human being than those of any other animal?

The fruit grower can keep several hogs in connection with his orchard or vineyard at little cost and big profit, as well as the man who raises hay or grain, as he can run his hogs on his stubble after harvest and finish on grain in the pen if he likes. But the most profitable way to raise hogs for market is in connection with a dairy where you have plenty of skimmilk, as there is nothing equal to milk to make pigs grow. In addition, give them alfalfa with a little grain. For raising brood sows or breeding boars I would much rather feed a grain and alfalfa ration than milk and alfalfa, as at two years the grain-fed sow will be the better. A hog at seven months should be ready for market and weigh 200 pounds. The profit lies in putting them on the market young at small cost of producing the weight.

MALTA FEVER IN TEXAS.

The United States Army surgeons who have been investigating Malta fever in Texas give the conclusions of their work in a recent number of the Journal of the American Medical Association. They find that the disease exists in the goat raising sections of Texas. About 20 per cent of all goats examined were found diseased. All cases reported gave a history of association with the goat raising industry, and six gave a history of drinking goat milk. A large number of these goats are direct descendants of goats imported from Asia Minor and South Africa, where the disease has been proved to exist in goats.

While many of the cases give a history of drinking goat milk, the factor of dust infection must be considered, particularly in the Nueces River Canyon, where goat milk is rarely used, but where the houses are surrounded by the dusty bedding grounds of the goats and the disease is not infrequent.

At this time of year (September) conditions are very unfavorable for the study of this disease. They believe that a statistical study of Malta fever in Texas in man and goats should be made in the months of March, April, May and June. This period embraces the kidding season and the time when the goats are in full milk. After this time the goats rapidly become dry. The great majority of cases of Malta fever among the ranchmen are contracted also during this season, when the whole family practically lives with the goat herds, caring for the kids and teaching them to suckle.

YELLOW SKIN OF THE GUERNSEY.

As is well known the Guernsey breed of cattle give milk and butter of the highest yellow color of any breed. Next comes the Jersey, a sister breed on a neighboring island. The Guernsey people set great store by this feature of high color and they have a perfect right to do so. But much serious discussion is had among the Guernsey breeders as to the best means of keeping up this desirable feature.

In a blind, general way they are told to "breed for it." But that is not enough. It will be useless to breed for a thing if afterward the thing is wasted and through wrong environment and wrong ideas of feeding that which went in with the breeding goes out because of wrong conditions. We undertake to say that not one winter stable in a thousand is light enough to enable the cow to keep up the yellow color of her milk.

What are the causes of the yellow color in milk? (1) The yellow pigment in the cow herself. If she has it the milk will show it.

(2) The greatest abundance possible of light. In summer all cows show more color in their milk than in winter, for the reason, partially, that they are exposed to more sunlight than in winter. The sun is the source of all color.

(3) The greenness of the food consumed. In winter the cow consumes food the color of which is bleached out. In summer the grass is of the deepest green. The inference is easy, that if the farmer wants his cows to give yellow milk he should keep them in a thoroughly well lighted stable and feed forage of a green color.

In London, the butchers require that all veals shall be fattened in the dark in order that their tallow shall be white. Many a farmer has bleached out his cows in the same manner by keeping them in a dark stable.

Alfalfa and clover hay cut when it is greenest and cured in the cock under caps will help wonderfully to keep the milk yellow.

The Guernsey breeders, of all men, should have the best lighted stables and the greenest hay in order that they may preserve in their cattle the yellow pigment established by nature. It will be useless to breed for this yellow color if environment and feed do not reinforce and supplement the breeding.—Hoard's Dairyman.

COTTONSEED MEAL FOR HORSES.

The Pennsylvania Agricultural College made some interesting experiments upon feeding horses cottonseed meal and silage. The object was to determine the value of silage to horses and to compare cottonseed meal to oats in the rations.

It was found that cottonseed meal is an excellent source of protein for finishing horses and is more economical than oats. It was also found that the horses fed cottonseed meal retained the bloom and finish better than when oats were used as a source of protein.

There were seven horses in the

A Cheap Succulent Feed

Alfalfa hay is a wonderful feed, but like any other dry feed it is improved if used with a succulent feed. Dairymen have long realized that they needed something to go with their alfalfa, but have not been able to get it at any reasonable cost; so the majority have continued to feed just alfalfa, with perhaps a little bran or rolled barley.

Now is the Opportunity

You can balance your ration with appetizing, succulent Steam-Dried Beet Pulp—cheaper and better than any mill feed or grain, it makes an ideal combination with alfalfa hay—cows relish it keenly, and thrive on it splendidly. It can be used in the ration to replace an equal amount of mill feed or grain, or to replace *one and a half* times the amount of alfalfa hay.

It is the milk-producing qualities of Steam-Dried Beet Pulp which have made it famous. 8 lbs. daily, fed with 15 to 20 lbs. of alfalfa hay, forms a properly balanced ration for a thousand-pound-cow, giving about 30 lbs. of milk daily. You can safely figure on this ration to give you one to two quarts more milk every day from each cow—that means 3 to 6 cents every day from each cow. It's easy money, that you can get without the least trouble or risk.

It is also a splendid green feed for poultry. They are extremely fond of it.

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Steam-Dried Beet Pulp is the beets of the sugar factory with only the sugar extracted—and then *dried by steam.* The wet beet pulp has long been favorably known for its feeding qualities, but it is inconvenient, costly and objectionable to handle. When the beet pulp is *steam dried* it is packed in 100-lb sacks, and will keep for an indefinite time without spoiling. Steam-Dried Beet Pulp is always uniform in color and quality, never burnt or blackened by smoke, always clean and pure. Ask your dealer about it—or write us.

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group, and they were divided into three groups according to weight and age.

Group one ate an average of 9.2 pounds of shelled corn, 8 pounds oats and 17.7 pounds mixed hay; the average daily gain was 1.64 pounds at a cost of 28.8 cents per day each, or 17.5 cents a pound of gain. Group two was fed 13.1 pounds corn, 1.5 pounds cottonseed meal and 18.1 pounds hay daily. The gain was 1.78 pounds, the cost of feed for each horse 24.8 cents, or 13.9 cents per pound of gain. Group three was fed 12.3 pounds corn, 1.4 pounds cottonseed meal, 10.4 pounds of hay and 17 pounds of silage; the daily gain per head was 1.6 pounds; it cost 21.5 cents daily per horse, and 13.4 cents a pound of gain. The estimate was based upon corn at 50 cents a bushel, oats 40 cents per bushel, cottonseed meal at $30 a ton, hay $12 a ton, and corn silage at $2.50 a ton.

It is of interest to note that silage, which is not usually considered good feed for horses, was used with good results, and when fed in connection with cottonseed meal made the gain per pound cheaper.

It is now a matter of general information that cottonseed meal is one of the cheapest and best sources of protein for work animals, and it should be more liberally used for this purpose.

GOVERNMENT BUYS MORE MORGAN HORSES.

The Bureau of Animal Industry of the United States Department of Agriculture has just purchased in Meade County, Kansas, four additional horses for use in the government breeding work that is being carried on in Vermont with the object of preserving and improving the Morgan breed. These animals are the seven-year-old Morgan mare Fanny P. (Vol. III, A. M. R.), two yearling fillies by Headlight Morgan (a son of Ethan Allen 2d), and a colt foal out of Fanny P. by Headlight Morgan. One of the fillies is out of Fanny P., and the mare is again in foal to Headlight.

Fanny P. is by Julian Morgan, the sire of Roy Morgan, champion Morgan stallion at the principal state fairs of the Central West in 1910. Fanny P.'s dam was by Flying Morrill, and her second dam by a son of Billy Root.

The pedigree of Headlight Morgan is well known to Morgan breeders. The horse was foaled in southwestern Kansas and has a well-deserved reputation in that vicinity as a sire.

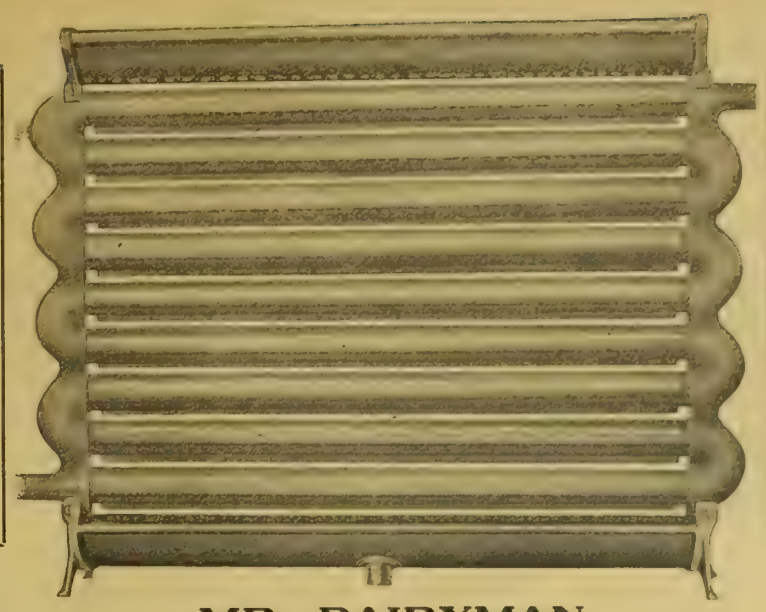
These horses are among the descendants of a large consignment of selected animals purchased in Vermont and Illinois in the early nineties by the Morgan Horse Company of Carpentersville, Ill., and sent to southwestern Kansas to take advantage of cheap pasture there. Unfortunately, however, and partly on account of the depression in the horse market several years ago, the venture was not a success, the company disbanding and the horses being scattered over a wide territory. Some of this stock still remains in Kansas and Oklahoma.

PREPOSTEROUS.

Willie: "I say, Ma, if Dad was to die, would he go to heaven?"

Ma: "Hush, Willie! Who's been putting such ridiculous thoughts into your head?"

EFFICIENT



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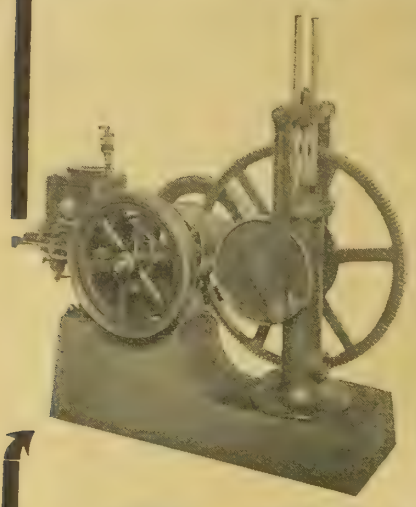

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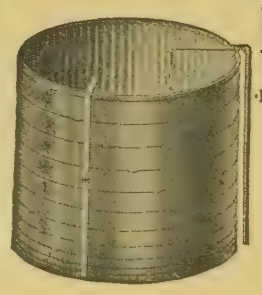

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Three pure bred imported Percheron stallions, one grand champion at the State Fair last year, the other two are ton stallions. One 5-year-old Kentucky jack; his colts will be shown day of sale. Six head of good milk cows.

All farm implements, including gangplows, cultivators, buck rakes, mowers, hay rakes, hay stackers, farm wagons, new 15-h. p. Fairbanks gasoline engine, feed cutter, Dozier feed mill, blacksmith outfit complete, 70 sets work harness, buggies, breaking carts, spring wagons, etc.

Mr. Cooper is one of California's prominent breeders and on account of having taken extensive holdings in the famous fertile valley of Yuma, Arizona, irrigation district, has instructed us to close out all of his stock, implements, etc., positively to the highest bidders, without reserve. Buyers looking for first-class brood mares and work stock should not fail to attend this sale. Old fashioned free barbecue at noon. The big horse sale of the year.

C. P. Cooper, owner and breeder.

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General Agriculture

PARCELS POST.

Obeying request for a statement as to "What Is Parcels Post," we have written Mr. Edward Berwick of Pacific Grove and from him have the following as to the aims of the League:

The widest possible extension of the sphere of the U. S. postoffice, so that it may afford the American public those postal facilities that are always enjoyed by old world lands and by the Republic of Mexico.

All interested in the progress and prosperity of the country are invited to become members. Lend a hand! There is no advance without effort. Send your names and subscriptions to John S. Dore, Treasurer, Fresno, Cal.

In Germany Beneficial.

The German postoffice for 6 cents transmits 11-lb. packages for 46 miles, and for 12 cents the same packages can be sent a possible 1500 miles; 110 pounds costs 60 cents for 46 miles.

Great Britain.

Great Britain has a special rate to farthest India or Burma; 3 lbs. for 24c; 7 lbs. for 48c; 11 lbs. for 72c. Half around the globe this particular mail is carried at little more than one-third of our local domestic rates. 11-lb. parcels are delivered in Abyssinia for $1.08.

Mexico.

A Mexican sends 11 lbs. to Algeria for 40c, (American money); to Belgium for 35c; to Holland for 35c; to Zanzibar for 60c.

United States.

The lowest domestic rate at which the United States postoffice will send parcels of merchandise is 1c per ounce, and no package must weigh over 4 lbs., excepting a printed book. The limit is 4 lbs. for 64c. The same 4-lb. package can be sent as far as London, England, for 48c; 16 cents less than from San Francisco to Oakland. This of course is too ridiculous. The reason is that, while the president and postmaster general control foreign rates, congress dominates domestic postage, and the transportation companies dominate congress.

What transportation companies can profitably do is exemplified by the fact that the express companies are now carrying for the British postoffice all parcels up to 11 lbs. weight between New York and any city in the Union, for 24 cents each.

The system has been in such successful operation in Britain for over 20 years past that in 1910 the British postoffice handled some 120,000,000 parcels and the gross profit on her mail service was about $25,000,000. Germany handled some 160,000,000 parcels and the profit on her mail service is about 53,000,000 marks (near $13,250,000).

In 1880 the Universal Parcels Post Union was formed between some 230 different governments for the transmission of international parcels. The United States did not become a party to this union, and has postal conventions with only some 40 out of the 230 above mentioned, those being chiefly West Indian islands.

Does it not seem to you desirable that Americans should be permitted to avail themselves of such advantages? Do you not think that what the German postoffice can do for the German, the British for the Briton, the Mexican for the Mexican—do you not think the United States postoffice should be able to do for the American? If not, why not?

As there are at present at least 40,000 more postoffices than express offices in the United States, those sending packages will have a more complete service.

The farmer can send his produce in small quantities direct to the consumer at small cost and better profit.

The storekeeper will be enabled to replenish his stock more frequently and quickly, not having to meet expensive express charges. Not being obliged to keep on hand large quantities of goods he can have a greater variety.

Delivery of goods to purchaser will be greatly facilitated, and in many cases with more economy than by private wagons, especially in suburban and rural districts.

Parcels Post presents so many advantages that in countries where it has become an established institution, so general is the satisfaction given that any one who would advocate its abolition would be regarded as insane.

THE SANITARY PRIVY.

Of great importance to human life is good health, which cannot be preserved if the sanitary conditions in and about living quarters are bad. Among the worst conditions to be found about any home is a soil that has become polluted. The secretary of agriculture has published a bulletin which treats of such soil pollution and certain simple plans for avoiding it.

Soil pollution by human excreta endangers the health of a family. It is possible by the expenditure of a few dollars for a sanitary privy to prevent this soil pollution, enabling the family to live, year after year, on the same premises, without endangering its members' health.

A number of widely prevalent diseases have been spread by means of polluted soils, simply because the facts have not been widely known, and it is to bring needed information on this subject to the dwellers on all farms and the residents of every village without a proper sewerage system, that Farmers' Bulletin 463 has been issued, and is now ready for distribution to anyone who makes application to either the secretary of agriculture, a senator, or representative in congress.

Full information, with illustrations, estimates of cost and plans for constructing the sanitary outhouses, is contained in the pamphlet. Directions are given as to how to keep a privy sanitary and how to properly dispose of night soil.

"In the United States about 400,000 persons suffer from, and about 35,000 die from typhoid, each year; over 2,000,000 persons have hookworm disease. Thousands of these deaths and many thousands of these cases of disease might be prevented by the use of sanitary privies."

"Although there may be no soil pollution upon one's own premises, his children may be exposed to all the dangers at the schools which they attend, and the entire family may be so exposed when they attend church, unless these schools and churches are provided with these sanitary conveniences. Lack of sanitary privies on neighbor's farms may also be responsible for cases of typhoid and infections on farms which are provided with proper outhouses, because disease germs may be carried for considerable distances by flies, by animals, by the feet of persons, by wagon wheels, and by drainage from one farm to another."

"In view of these well-established facts, it is evident that among the highest duties that rest upon a farmer, or dweller in a country village, is not only to have a sanitary privy on his own premises, but to insist that the pollution of soil be prevented throughout the entire neighborhood."

THE SEVENTEEN-YEAR LOCUST.

The seventeen-year locust visits these parts again this season, and we hope he will be able to see improvement in our world since his last inspection of it. He is a curious little beast and needs to be explained. What is the reason of him? What is he good for? Why is his period so peculiar? They tell us that down South his period is shorter and his visits come every thirteen years. That suggests that he may have been originally designed for equatorial life, or something still hotter, and meant to hatch out annually, but grew dilatory as his habitat cooled.

Perhaps he is a parable, and intended to suggest how often legislatures should meet.

He should be expounded and explained. We would like to know, for example, what conclusions about him

Brightest, Strongest and Best

You need the most powerful and reliable light you can get when loading the wagon for market in the early morning.

Rayo lanterns are the most powerful and reliable lanterns on the market.

They do not flicker, but burn with a steady, brilliant light. They will not blow out. They are economical, because, besides being moderate in price, they give you the greatest light value for the oil they burn.

Rayo lanterns are made in numerous styles, sizes and finishes, to suit any use. Best material and workmanship. Simple in construction, yet reliable and strong.

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Dealers everywhere; or write for descriptive circular direct to any agency of the

Standard Oil Company
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BULBS

For fall and winter planting, also Flower Seed for fall sowing.

New catalog now ready, mailed free upon application.

Now is the Time to Sow

Payne's Royal Exhibition Pansy Seed
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Payne's Christmas Flowering Sweet Peas
all described in the above mentioned catalog

Eucalyptus Seeds

a specialty. Write for pamphlet ***"Eucalyptus Culture"*** describing 33 species, with information on planting for commercial purposes.

Theodore Payne
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How About Stocking That Farm

See Big Auction Ad on Page 358

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A FREE BOOK ON

Rhubarb Culture

$1000 profit per acre; plant now. Berry plants of all sorts. Cut this adv. out and mail today.

J. B. WAGNER, Pasadena, Cal.

The Rhubarb and Berry Specialist c

BUFF ORPINGTONS
Mr. and Mrs. W. S. Sullivan
50 Market Street, Agnew,
Santa Clara County, Cal.

would be reached by Chief Justice White and his brethren after they had turned him over in their minds for a while, and whether Justice Harlan would concur. He seems to be something outside of the common law, with a rule of his own, and punctual in his response to its demands. The puzzle is to discover how he and his rule are related to the common law of nature. He is probably related in some way. The Creator seems to have indulged a considerable range of taste in the creatures with which He has furnished this earth. Some of them seem to have been made for fun—toucans, for example, with their extraordinary colored bills like comic false noses, and the blue mandrils in the zoo, with their bright red and blue tints and amazing ugliness! But most of the creatures conform to a general plan, but these seventeen-year locusts are irregular.

How very much there is that we don't know and can't explain, and how uncommonly good the guessing continues to be for minds that are keen enough to be intelligently inquisitive! —Harper's Weekly.

INSURANCE AGAINST AGRICULTURAL ACCIDENTS IN DENMARK.

The problem of insurance against farming accidents is still on the board in France, Italy, Russia, Switzerland, and many other countries. It has already been definitely solved in Denmark, on the contrary, by the law of May 27th, 1908, which makes the insurance of all persons concerned in agricultural labors obligatory, as well as those engaged in forest or gardening occupations, provided that their salary is not more than 1500 crowns (2100 frs.) per annum.

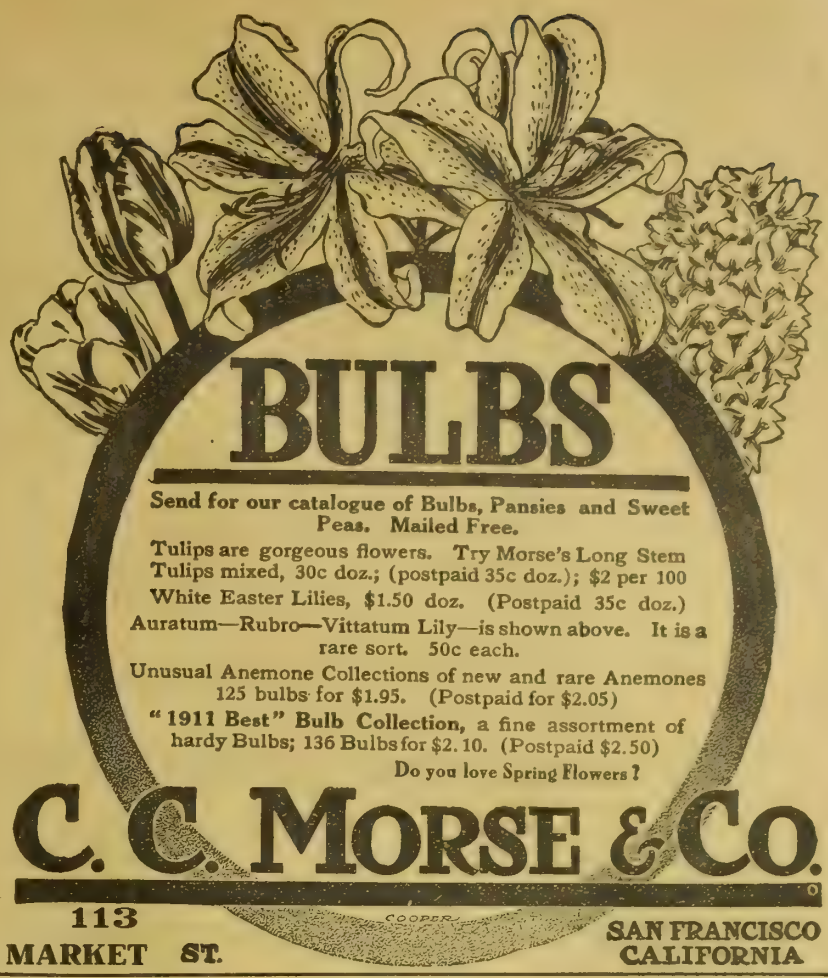
The Danish law, as explained in an article in the Bulletin of Economic and Social Intelligence for June published by the International Institute of Agriculture, does not take into consideration simply the accidents to workers attached to agricultural machines, as is the case with the majority of the laws of other countries, but includes also all the accidents during work, no matter what be their cause (handling of labor implements, transport of material, animals assisting in the labor, etc.).

The employer is responsible for the insurance, but he is free to insure with the society that he prefers, whether it be a mutual aid society or a share company, provided it is authorized by the ministry. We may remark that amongst the share companies which deal in this branch of insurance in Denmark there is an English and a Swiss company.

If the accident should cause a temporary disablement for work the person insured has the right, starting from the 13th week of disablement, to a daily compensation of 1.05 frs. for workmen less than 18 years of age, and 1.65 frs. for adult workmen. During the first 13 weeks the claim for the accident is defrayed by the sick funds. If the disablement is permanent and complete, the compensation paid is equal to six times the annual wage, the limit, however, being 3600 crowns (5000 frs.). Lastly, in the case of death the heirs receive compensation equal to four times the annual wage, but not more than 2500 crowns (3500 frs.)

The figures show that the compensation paid for disablement (409 cases in all) in 1910 was about 500,000 frs. that paid for deaths being 150,000 frs. In Denmark slight accidents are much more numerous than are serious ones; in fact, whereas in 1910 there were 313 accidents in which the disablement for work was less than 25 per cent, there were only 7 in which the percentage was more than 75.

How to take one's recreation with an automobile along the road is told by Thaddeus S. Dayton in the current number of Harper's Weekly. Any sort of automobile on which a hundred pounds of luggage can be carried can be used as a camping vehicle, says this author. "A tent big enough for two, food for a week, blankets for a bed, a rifle, and an axe will weigh less than a hundred pounds. With such an outfit, strapped on the back of the automobile, you can camp from one end of the United States to the other."



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Tulips are gorgeous flowers. Try Morse's Long Stem Tulips mixed, 30c doz.; (postpaid 35c doz.); $2 per 100

White Easter Lilies, $1.50 doz. (Postpaid 35c doz.)

Auratum—Rubro—Vittatum Lily—is shown above. It is a rare sort. 50c each.

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Do you love Spring Flowers?

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MAN MUST EAT

There is money in

SUGAR and CATTLE

Share in the profits of an agricultural investment, comprising over 21 square miles of rich agricultural lands.

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The land is free from incumbrances, which affords our investors the highest degree of security.

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Additional capital is required for improvements and to buy cattle to stock the ranch. A limited amount of investment certificates will be issued in units of $100 cash or on installments. Six per cent per annum interest is guaranteed, and we also share the profits with you. Option given to withdraw your money and profits or to become a part owner of this great property.

Applications for certificates will be filed in the order received. This enterprise is backed by some of the most substantial and well-known business men of Los Angeles. We invite the strictest investigation.

Send for free booklets and descriptive literature.

C. E. Reed, Secretary

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Our first car of the season has arrived from Holland, and the Hyacinths, Tulips, etc., are of superlative size and quality.

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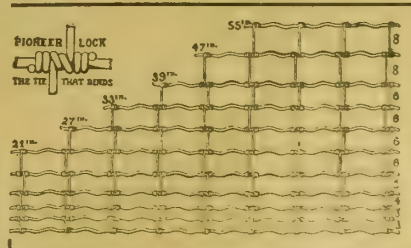

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A Journal of Horticulture and Agriculture.

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THE NUT GROWERS.

The National Nut Growers Convention was held in Mobile, Alaama, last week. The association is busy in the advancement of nut growers' interests, and gives special attention to spreading the gospel of pecan growing.

RIPENING THE DATE.

Chemistry and ripening of the date and other matters of interest to producers are given in Bulletin No. 66 of the Arizona Experiment Station. It is intensely interesting and has a vast fund of information on an industry little understood. Arizona is foremost in date production, and we believe there will be great increase in the planting during the next few years. The bulletin is a credit to the station.

TOO MUCH FOR HIS MONEY.

Mr. Winthrop Howland writes: "I wish to express my appreciation for the benefit derived from my advertisement in the Cultivator. So many have written me on the subject of milch goats that it will be some time before I can answer them all. Kindly explain to readers who have not received answers." Mr. Howland says further that he will be unable to sell any more animals until January kidding time.

CONSERVATION CONGRESS.

The new officers of the Conservation Congress are: President, J. B. White, Kansas City, Mo.; executive secretary, Thomas R. Shipp, Washington, D. C.; treasurer, D. Austin Latchaw, Kansas City; recording secretary, James C. Gipe, Clarks, La.

The newly elected president has been chairman of the executive committee of the Congress for two years and has long been active in conservation work.

MALTA FEVER.

The Department of Agriculture is now investigating the introduction of Malta fever by goats brought into Texas from the Island of Malta. It is declared that in Northern Texas and sections of New Mexico this is becoming very serious, both as affecting the goat industry and humans who have taken the disease from the goats. It has been in existence there for many years, but the gravity of the situation has not been appreciated until within the last few months.

SAVE THE FILES.

Every week come in inquiries that have been answered in some former number of the Cultivator, and instead of answering in the query department, which is already too long, word is sent by mail to the inquirer to refer to a previous number, and usually the answer comes back that the number is lost and requesting another. We suggest again that each number of the Cultivator contains some point which is worth enough to be given shelf room to preserve the entire year's issue. At the end of each six months an index is made of the articles appearing in that volume.

We do not suggest this to deter our friends from writing to the office for further information, for that is our business, the supplying of information, and we trust all queries will continue to come, but there will be abundance of problems to engage all our surplus time without unnecessary repetition of old answers. A file is a remarkably good tool for sharpening things, and the file of the Cultivator should be used for sharpening the wits of those who look to it for help.

MUNICIPAL FORESTS.

San Diego is the first city in this state to establish what is common in some European countries, a municipal forest to assist in bearing municipal expenses. A few years ago it was decided that the pueblo lands should be used for planting trees instead of disposing of them in small parcels as had been done prior to that time. There are still about 7,000 acres, all within a few miles of the city, and these are being planted chiefly to eucalyptus. How great the profit will be or how much taxes will be lessened remains to be seen, but we are glad one city is progressive enough to make the experiment.

SAN DIEGO SHOW.

The fall flower show of the San Diego Floral Association will be held October 25, 26, 27. The San Diego association is a live one and is making every effort to be worthy of a great exposition city. It has charge of the thousand dollar exposition rose contest, in which there have already been made nineteen entries. These are from seven different states. Thirteen of the contestants reside in California, and the other six in New Jersey, Texas, Kansas, Tennessee, Indiana and Maryland. We do not know whether San Diego County growers are barred or not, but so far it has not a single contestant.

OLMSTEAD RETIRES.

It is to be regretted that the Olmstead Brothers, landscape architects, have withdrawn from connection with the Panama-California Exposition at San Diego. In expressing regret as to this loss, the "California Garden" remarks: "A certain policy of compromise and makeshift has crept into all public work at San Diego." If San Diego is going to make a reputation for its 1915 exposition it wants to get busy and stop the contentions which seem to have had their start with the society event of choosing a queen to preside at the festival of ground breaking. Petty jealousy and advancement do not work together. How big is San Diego?

NEW YORK LAND SHOW.

California has been specially active in preparation for an exhibit at the great land shows to be held in New York and Chicago. The New York Show opens in Madison Square on November 3, and that at Chicago on the 18th, with nearly a week between, in which time many of the exhibits will be transferred. Luther Burbank joins in the preparation of the California exhibit and will be present during a portion of the time. Those who know of this exhibit declare that it will be one of the finest. It may help in attracting more tourists than are now coming, but it must be confessed that even at the present the railroads are placing a vast number of new people in this state.

DOLLAR FIFTEEN RATE.

Great disappointment obtains in the ranks of the lemon growers. The ruling of the Interstate Commerce Commission granting a reduction in the rate on lemons which was increased by the railroads immediately after the establishing of the cent and a half tariff has been reversed by the Commerce Court. This will mean an annual cost to the growers of between two and three hundred thousand dollars. It is expected that the commission will carry the matter to the Supreme Court. We note that dispatches from Washington indicate a movement to abolish this more than useless tribunal. It is assumed by some that it was established to nullify the good work of the Interstate Commerce Commission, and if such was the intention it is making good to its creators. It has been deemed that this is only another proof that the interests do use the courts to accomplish their ends over the will of the people. Yet there are many who do not believe in the recall of a judge, because of his claimed infallibility.

PROTECTION ON FRUITS.

The lemon men's ability to cooperate in marketing their fruits and in perfecting another organization to look out for transportation, tariff and other great questions has stood them in good stead. The fight is not yet finished and the same organization still has work before it. There has been a great deal of talk about the attack on the lemon tariff, but let us not allow our interest in the lemon to overshadow other fruits and nuts which may mean as much or possibly more to the state. Almost every fruit produced in California is being aided by protective tariff. The lemon men are looking out for themselves, but what about the raisin, prune and other dried fruit producers? Are they gathering together facts and figures and perfecting an organization which will be able to present these facts and figures before the proper committees when Congress convenes? Outside of any political consideration of free trade and protection, so long as protection obtains, and we believe it always will in America, the fruit grower may just as well be prepared to take advantage of it and protect his own industry as does the great manufacturer of the Atlantic seaboard. Let the fruit people get busy.

WATCH YOUR CREDITS.

Every Cultivator which goes to a regular subscriber has on it or on the wrapper a label showing date to which subscription has been paid, yet often complaints are received because some months previous payment has been made and no credit given. Will not subscribers note these labels, and if the dates are not changed within a couple of weeks after remittance, send word to the office, that the matter may be attended to while it is still fresh in the memory of all? At the top of the first column on this page is the statement: "Dates of expiration of subscripton accounts appear each week on the address label. 'John Jones 7-11' means that John Jones has paid his subscription to July 1, 1911. Notify us by mail if you desire to discontinue." This appears in each issue, but we assume it is a portion of the paper that is seldom read, so we trust we may be pardoned for repeating it here and calling attention to it once more.

The Cultivator is continued to subscribers until request is made to stop, unless the subscriber is a year or more in arrears, when, by the postal regulations, we are compelled to stop sending the paper.

Agricultural News Notes of the Pacific Coast

Northern California

The quail season opens next Sunday.

Orland, Glenn County, is planning for a poultry show this fall.

Pears are the leading fruit now going forward from Sacramento.

Cowboys are engaged in the annual roundup of beef cattle at Ft. Bidwell, Modoc County.

Sacramento Valley Tokay growers are shipping table grapes packed in fine redwood sawdust.

Sonoma County's tomato crop is reported as excellent. It is being handled by the California Fruit Canners.

One truck gardener at New Pine Creek, Modoc County, made a profit of $200 per acre from his crops this year.

Bogue, Sutter County, has shipped nearly 300 cars of peaches since July 1st. The fruit went mostly to canneries.

Yolo County people are urging the immediate beginning of work on State Highway across the Yolo Basin to Sacramento.

Land on the west side of Sutter Basin in Yolo County has been purchased and will be reclaimed and subdivided. The tract comprises about 25,000 acres.

It is claimed that San Francisco capitalists contemplate an irrigation scheme for Tehama and Glenn Counties which will involve the expenditure of ten million dollars.

After the recent storm it was reported that half of the table grape crop of the Sacramento Valley had been destroyed, but this is now found to have been an overestimate.

The prospects are more favorable than ever for an irrigation system for the Honey Lake Valley in Lassen County. The valley contains many thousands of acres of rich land.

Suits which have been in the courts several years regarding lands near Martinez, have been settled, and it is hoped the lands will now be thrown open to settlement by small holders.

Preliminary work for the construction of a dam of the Feather River near Greenville, Plumas County, has been taken up, which calls for the irrigation of nearly 40,000 acres of land.

Oroville orange growers expect this will be the banner year. Picking will begin not later than Nov. 5th. A canvass of the growers shows that the crop will be by long odds the largest ever.

A mass meeting was recently held at Santa Rosa at which the Sonoma County Co-operative Poultry Association discussed the egg market with the contractor who had agreed to handle the crop.

Prof. Clarke of the State University is holding a series of Farmers Institutes, the first being at Little Shasta, Siskiyou County last Monday; another at Diever, Lassen County, Oct. 4-5; another at Fall River Mills, Siskiyou County, Oct. 6-7.

Notice of appropriation of 100,000 miners inches of water of Little Stony Creek has been filed with the recorder of Glenn County. It is claimed the waters are to be used upon lands west of Willows and north into Tehama County.

Central California

Escalon, San Joaquin County, is asking for a creamery.

There are now 34,954 acres of irrigated land in the Modesto district.

Huron, Fresno County, will produce about 125,000 sacks of Egyptian corn.

A Kerman grape grower has 16,000 trays of raisins drying from seventeen acres.

It is now estimated that the shortage of the raisin crop will be about 40 per cent.

The San Jose Grange spent its last meeting discussing constitutional amendments.

Farmers of Porterville, Tulare County, have organized a co-operative telephone service.

Canneries of Central California are sending out several cars of canned goods every day.

The San Jose Dog and Poultry Show is being held this week with the greatest number of entries ever.

The Southern Pacific is working with the Supervisors of Kings County in eradicating squirrels from its lands.

A dairyman at Hughson, Stanislaus County, claims the successful operation of a milking machine at his dairy.

The rush at Selma cannery is over and while fruit is still being delivered, not in the quantity of a few weeks ago.

The Farmers Union of San Jose was recently addressed by a representative of the Marine Hospital Service on squirrel eradication.

San Joaquin County farmers are raising money by levying a five cent per acre tax for the purpose of fighting the ground squirrel pest.

The Tulare Dairyman's Association met recently at Tulare and discussed the matter of grading cream and securing better prices for dairy products.

The California Wine Association has reduced its prices on sweet wines 25 per cent, which is alleged to be the first step against the independent wine makers.

Railroads have made a special reduction in tariff on table grapes because of the demoralized condition of the market, and a $269 rate now obtains instead of the former rate of $299.

The Board of Supervisors of Madera County have refused to continue the fight against the squirrel pest because the Federal Government has declined to care for the pests which occupy the reserves.

Boosters for the Watsonville Apple Show, a trainload of them, descended on San Jose one day last week and extended an emphatic invitation to attend the apple fair which is being held this week.

Prominent fruit dryers are somewhat concerned for fear President Taft may join with Dr. Wiley in his famous sulphur ruling and that great injury may possibly be done to the fruit industry.

Delegates from six counties, Amador, Merced, Mariposa, San Joaquin, Tuolumne and Contra Costa, met in Stockton Saturday to discuss the matter of uniting in one exhibit at the Panama-Pacific.

Southern California

Redlands is planning for a carnival.

Imperial Valley has already shipped several cars of cotton.

The biggest and finest crop of walnuts ever is the general verdict.

San Bernardino Indians complain because of shortage in the pinon crop.

Imperial Valley will make exhibits at the coming Arizona Territorial Fair.

One of East Highlands orange packing houses is supplied with a precooling plant.

Yucaipe Valley apples are showing up an unusually large crop of excellent quality.

El Centro reports a greater acreage of September sown barley than was ever planted during that month.

The Loma Ranch Olive Company of Fallbrook has received a carload of machinery for the manufacture of olive oil.

It is now assured that the Rincon road along the coast in Ventura and Santa Barbara Counties will soon be constructed.

One barley grower of the Imperial Valley has just sold his crop of 11,000 sacks at $1.60. This is the record sale for the Valley.

A company has been formed at Santa Ana for the purpose of planting 2000 acres of sugar beets on the Santa Margarita Ranch.

Some cotton pickers in the Coachella Valley are reported to have gathered as much as 400 pounds in an average working day.

A careful inspection by Deputy Strong in the alfalfa fields of the Imperial Valley shows them to be free from the alfalfa leaf weevil pest.

Sugar beet growers of Southern California have secured the requested increase in price, fifty cents being added for the coming season's contract.

Lemon growers are making preparation for the fight which they know they must face when congress meets to preserve the tariff on lemons and the entire lemon industry.

Cattle men of San Bernardino County report the pasturage on the forest reserve as exceptionally good this year. The cattle have already been moved to lower regions.

The big walnut crop is causing some growers to call upon school children to aid in the harvest regardless of the provisions of the child labor law. One school at Goleta, Santa Barbara County, closed during the harvest.

The record for summer shipments of oranges has been broken this summer, when the three months ending Sept. 30 saw 6,540 cars as a total. The previous largest shipment was more than 1,200 cars short of this.

Southern California's orange crop is thought to be equal to last year's crop in quantity, and from present indications the quality will be superior. As to ripening, it will be some two or three weeks later than last year.

The California Fruit Growers Exchange handling most of the orange crop of California reports an output last year of 10,842,831 boxes, or expressed in cars, 28,123. This is an increase of over 8000 cars over the preceding year.

The Coast

The wool industry is the largest single industry in Nevada.

Whitman County Fair will be held at Colfax, Wash., Oct. 16-21.

The Philippine Islands are now making sugar from the sap of nipa trees.

The Willamette Valley in Oregon is receiving a large number of colonists.

San Diego Fair boosters will attend in special train the Territorial Fair at Phoenix.

The Fremont County Fair at Rexburg, Idaho, has just closed its most successful meeting.

The State Horticultural Inspector of Idaho refuses permission to sell wormy apples in that state.

Products of the Yakima Indian Reservation were exhibited at the fair at Toppenish, Washington.

The Agricultural College of Idaho will give special instruction in irrigation at the State Fair.

The three states, Washington, Oregon and Idaho, will produce this year 64,000,000 bushels of wheat.

The fruit crop of Idaho is declared by a state horticultural inspector to be larger than any preceding year.

The Sixth International Dry Farming Congress will convene in Colorado Springs, Colorado, next Monday.

A farmer at Ilo, Idaho, recently hauled one load of timothy seed to market for which he received $781.

The State Agricultural College at Bozeman, Mont., is experimenting with dynamite in digging holes for trees.

A hog raiser at Pullman, Wash., claims a return of seven hundred dollars for a ten dollar investment in hogs.

Hop growers at Yakima, Wash., have refused 50 cents per pound. Picking is now in full swing with 2500 pickers in the field.

Cherry growers at Careywood, Idaho, report "Black cherry aphis" which has caused fearful destruction to cherry trees.

The State of Washington has passed a law compelling all pupils attending public schools, whether city or country, to make agriculture at least a part of their course.

Cocoanut growers of the Philippine Islands fear that the soya bean will prove a serious competitor in that the oil from them is said to be the equal of the cocoanut oil.

Grain growers of Washington are endeavoring to conquer the smut pest. Some have soaked their seed in a solution as strong as one pound of vitriol to two gallons of water.

At the recent meeting of the Oregon Pure-bred Livestock Association at Salem, Dr. Withycombe made the statement that Oregon livestock brings the producers $91,689,000 per year.

A tract of land containing over a hundred thousand acres will soon be under irrigation because of waters carried under the Colorado in a great siphon constructed by the reclamation service.

The State Bee Keepers Association of Oregon meeting recently at Corvallis, resolved that the industry in that state demanded more protection and petitioned the appointment of a bee inspector.

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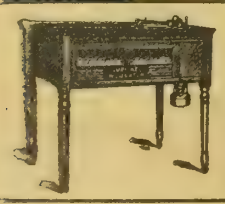

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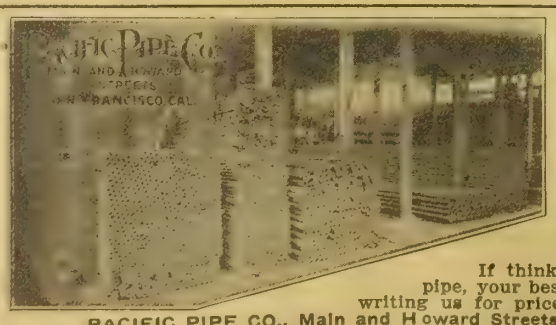

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Profit in the Poultry Yard

Practical poultry people who may have ideas from their experience as to methods of feeding and housing and general care of poultry will confer a favor upon the Cultivator and its circle of readers by sending in concise accounts. Mrs. Basley is always willing to answer queries, which with the experience of others should make this a most valuable feature in poultry life on the Coast. Opinions or matters of a personal nature should be omitted, but a concise statement of facts is always valuable.

WHAT IS THE BIGGEST POULTRY PROBLEM?

"The three problems in poultry raising that trouble the farmers of Oregon more than any others," says Professor James Dryden of the Oregon Agricultural College Poultry Department, "are first, getting the eggs in winter; second, lice and mites; and third, raising the chicks.

The answers to this question are designed to show why there is not more profit in the business. Out of 333 answers we received the following replies: 62 said the problem was, how to get eggs in winter; 60, lice and mites; 56, raising the chickens; 24, hawks; 6, coyotes; 34, other vermin; 4, rains or wet weather; 20, feeding; 9, hatching; 58, miscellaneous difficulties.

"To make the hen lay in winter is apparently the real problem, and yet its solution depends upon the solution of the other problems. It is not merely a question of caring for or making the hens lay. The problem goes back to the making of the hen. If the hen were made right there would be little trouble in making her lay. How to make the hen lay in winter resolves itself largely into a question of making the hen.

"I am inclined to think that the 56 who said that the raising of the chicks is the hardest problem came nearer hitting the nail on the head. To get a profitable egg yield under any conditions, the flock of layers must be frequently renewed. The old hen doesn't pay. For commercial purposes it seldom pays to keep her more than two years. This means that in a few years the farmer has raised several generations of fowls, and any mistake in the breeding or raising is soon evident. To be successful a poultry raiser must be able to maintain offspring with the same vigor and vitality as the parent; otherwise there would soon be no eggs in winter because of lack of constitutional vigor in the stock.

"But it is not all in the raising. There is probably more in the breeding, and it is not so much a matter of the breeds. No matter how they may be raised, fed and cared for, some hens won't lay, because they have not the breeding and laying capacity. On the other hand, some will lay, almost in spite of neglect; that is a question of breeding.

"One farmer replied to the question, that the problem with him was, 'To make the exit large enough for the hens, but too small for our valuable cattle dog, and to have open front house and yet be protected from skunks, owls, hawks, and wild cats.'

"Another complained of the problem of shipping and marketing; another has difficulty in getting on the market the kind of feed he wants, and still another finds his problem, "To keep the chicks growing from time of hatching until ready for market and keep them free from disease.'"

KEROSENE EMULSION FOR VERMIN.

During the past year we have had less trouble with vermin than ever before, and I give the credit to kerosene emulsion applied liberally and often. At least once each week we spray the nests, perches, dropping boards, the ceiling over the perches and the back wall above and below the dropping boards. We use a bucket spray pump and do the work thoroughly, giving every board and crack a good wetting, and if the nesting material is clean we do not take it out but soak it until the water drips from the nests. This is done late in the afternoon after the eggs have been gathered. The nests are dry by the time the hens want to use them the following morning, and are free from vermin of any kind.

The only severe case of mites we have had to contend with this season was in a colony coop used as a roosting place for broody hens. This coop was in a small yard and had been overlooked when the general warfare was carried on until it was in pretty bad shape. We cleaned it out, sprayed it once with whitewash and twice with emulsion and had no more trouble. Since then it has had its regular weekly spraying with the other quarters and is in excellent condition. If there are any mites around the poultry plant they will be found in the "broody coop" as the hen carries them with her from the nest. Colony coops containing growing stock are treated in the same way.

How Kerosene Emulsion Is Made.

As well as being effective as a vermin destroyer it is very inexpensive, costing little more than one cent per gallon. At this price one can afford to apply it in liberal doses. It is made as follows: Dissolve by boiling one-half cake of laundry soap in two quarts of water. Remove from the fire and while hot add one gallon of kerosene and stir rapidly until mixed to a creamy consistency. This is a stock solution, and can be put in a jug or bottle and kept indefinitely. It should be well corked to keep out flies, otherwise it will have to be strained before it will pass through a sprayer. To use take one part of this mixture to seven parts of water, mix well and apply as a spray.

At this time of the year hens having access to soft ground will make their own dust bath, and if the poultry house is kept free from lice and mites the fowls will not be troubled by them to any great extent. The main point is to keep everlastingly at it.

Kerosene emulsion is also used by fruit growers for plant lice, but owing to the danger of injury to the foliage it should be diluted to one part of emulsion to ten of water, instead of one and seven.—The Standard.

LIVER TROUBLE IN FOWLS.

Generally speaking, liver troubles follow acute indigestion. This indigestion may be brought about by irregular feeding, or being fed on one kind of grain too long, dirt an sour feed with poor supply of grit. To withhold the food a long time and then allow it in over amount is one of the most fruitful sources of digestive disorders.

Drinking water which has been contaminated with filth, or which has stood in a warm place, or in the sunshine until it has become putrid; exposure to draughts, cold rains, or damp roosting quarters, particularly during the moulting season, are all conducive to indigestion.

If any one of these conditions surr unds your fowls, change them, putting them in light, dry houses and giving them wholesome nutritious food. In very bad cases give daily 5 grains of rhubarb, and every fourth day one grain of calomel, says the Union Guide. Give them plenty of grit and charcoal. Charcoal is one of the best purifiers for the system of either fowl, animal or man.

The liver is one of the most important organs of the body, furnishing bile, one of the principle digestive fluids. It also assists in some of the most necessary chemical changes which occur in the blood. It is therefore an easy matter for it to become deranged from the causes that produce indigestion. Inflammation of the liver is quickly followed by death unless immediate relief can be given. The symptoms are a yellow appearance of the skin, and yellow or slightly bloody evacuations. One of the chief indications of this disorder is lameness, especially of the right leg, and when this shows itself you may be pretty sure that inflammation of the liver is going on. D. E. Salmon, D. V. M., says the treatment of birds so affected is not profitable unless they are very valuable for breeding or exhibiting,

CALIFORNIA POULTRY SHOWS.

Watsonville.—Oct. 11-14, 1911. Pajaro Valley Poultry Association, E. L. Andrews, secretary.

Stockton.—Nov. 7-11, 1911. San Joaquin County Poultry Association. Wm. H. McKay, secretary, Stockton, Cal.

Oakland.—Nov. 21-27, 1911. Alameda Country Poultry Association. Wm. T. Fros, secretary, Oakland.

San Diego.—Nov. 28-Dec. 2, 1911, San Diego Pigeon and Pet Stock Club. H. J. Gottesburn, secretary, Coronado.

Corning.—Nov. 29-Dec. 2, 1911. Corning Poultry Association. E. L. Randall, secretary, Corning.

Escondido.—Dec. 6-8, 1911. Escondido Valley Poultry Association. B. V. B. Lincoln, secretary.

Petaluma.—Dec. 6-9, 1911. Petaluma Poultry Association. H. R. Campbell, secretary.

Napa.—Jan. 4-6, 1912. Napa County Poultry Association. Wallace Rutherford, secretary.

purposes. His remedy is one-half to one grain of calomel to begin with, followed by 20 grains of Epsom salts and two grains of bicarbonate of soda after twelve hours. Naphthol, or benzo-naphthol, may be given twice a week to disinfect the intestinal canal. When the sick bird is considerably improved give green food, tonics or raw beef, and allow the bird free exercise in the open air. The disease is not contagious, but the cause that produced it in one bird may affect the whole flock.

ALFALFA FOR POULTRY YARDS.

Philo K. Blinn, Colorado Experiment Station.

Alfalfa is one of the best plants to furnish green food for chickens, but ordinarily it soon kills out if over pastured.

Alfalfa crowns that have been cut off and plowed under, and that have taken root again, are much harder to kill out, as many have found by repeatedly grubbing out the same stool that has taken root the second time. Such crowns seem to put out shoots from each piece of root that is left in the ground, if the soil is in favorable condition.

Those who desire to establish alfalfa in their poultry yards can succeed in this way by plowing or spading under alfalfa crowns that have been freshly plowed out from some field near by. Early in the spring is the best time, while the crowns are still dormant. The crowns should be covered four to six inches deep, and the soil wet down and kept moist, and the chickens kept off until the crowns have become established, which will be much sooner than alfalfa from seed, and will stand much harder pasture.

There is four per cent less of protein and six per cent less of fat in eggs than in sirloin steak; half as much protein and one-third as much fat as in cream cheese; twice as much protein and ten times as much fat as oysters. Fuel value, about one-third that of rich cheese, and two-thirds that of beef. It is the protein or nitrogenous matter that builds up and repairs the tissues of the body, while the fat supplies energy.

Medical science says that raw eggs are more quickly digested than cooked ones. Soft boiled, roasted and poached eggs are more easily digested than when fried or hard boiled. The stomach will digest a raw egg in from one and a half to three hours. Soft boiled and roasted require from two and a half to three hours, while hard boiled or fried must be allowed from three and a half to four hours for digestion. —Poultry, Garden and Home Advocate.

The great number of entries at the Kings County Fair forced the building of new sheds and barns.

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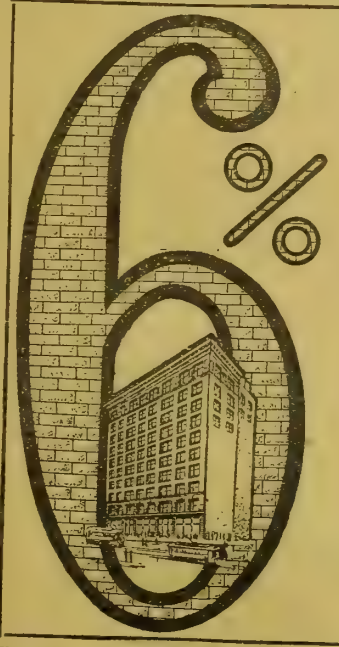

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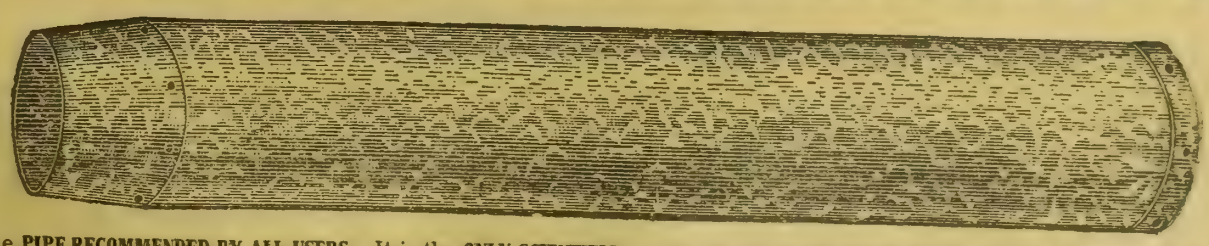

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Irrigation and Forestry

FLORIDA METHODS OF IRRIGATION.

No matter how rich our country may be in an agricultural way, or how deep and black the soil, it would soon cease to produce if moisture were withheld, as all plant growth absorbs food in liquid form. In the first place the very microbes whose function it is to prepare the meals underground, cease action and become dormant when the soil becomes dry, but are awakened to active life at once upon coming into contact with moisture.

Unfortunately there is no known land on this wide earth where it rains just enough either to suit plant development or to please everybody, hence if we wish to be uniformly successful, we must supply as well as remove water artificially. In locations where the moisture supply is under absolute control, the most intensive and successful farm operations are carried on, and the greatest amount of products grown per acre.

Successful planters, being ambitious, are continually striving to do better, hence better methods are adopted as quickly as they are proven a success, and for this reason many are preparing to irrigate in all parts of South Florida, especially since our crops here are grown principally in or during the dry season of the year.

There is considerable inquiry in regard to the irrigation subject, and various kinds of plants are being installed. The styles of plants are governed by the kind of soil and sub-soil, whether sand, muck, clay or marl, the latter three possessing the faculty of retaining moisture to a much greater degree than the first named. The water supply also governs the kind of plant installed to a large degree. On land with sand or rock subsoil, irrigation is accomplished by what is known as the overhead system. It is a very successful method, as it not only is economical of water, but it would be impossible to hold water in sandy subsoil on account of its leachy character. This style is the most costly to install. Besides the expense of mains, consisting of two to four-inch pipe, laterals must be laid 25 to 40 feet apart, with long or short standpipes (usually about six feet high) of three-quarter-inch iron pipe placed in a corresponding distance apart.

These standpipes are crowned with various kinds of spray nozzles, aiming chiefly to get such a nozzle as will distribute over as large an area as possible. This system has its advantages as well as its disadvantages. Among the former may be counted the prevention of damaging frost; it also washes off red spider and makes it unpleasant for leaf-eating insects; on the other hand, it has a tendency to produce a class of fungi such as flourish best where the foliage is damp.

This overhead system requires a pressure of about 25 pounds per square inch to properly force the water and to generate such a spray as will best imitate a fine rain. Spraying is best applied evenings or after night, but beneficial applications can be made during cloudy weather. In all attempts at irrigation, you will make no mistake by using a surplus of water and by keeping the soil—especially if of a sandy loam—constantly in a moist condition; and unless this is done religiously, absolute failure is liable to result.

Probably the method that is most successful is the one of placing underground tiles and forcing water through them. This is the system so largely used at Sanford, Florida. However, this system is only feasible where there is a sub-stratum of soil which is more or less impervious to water, such as clay, marl or hard-pan subsoil.

When the Everglade drainage is completed, it is proposed to install locks in the canals and thereby control the water level in the soil. This will at all times provide moisture and will eventually assure very cheap irrigation for this entire area. But until this work is completed, which will take some time to accomplish, smaller areas in this section can be controlled easily by putting in one of the shallow lift pumps of great capacity, such as are used to pump out, or flood rice fields.

With all crops, especially vegetables, the increase in production is very marked when water is applied scientifically, the increase being often double; in fact, in seasons of protracted drouths little or nothing can be grown unless under water control. Not only is this increase in production to be noted, but the quality is proportionately improved, and such products always bring an increased price in the market, and are in much greater demand. A great number of our tropical plants require considerable moisture and will not produce properly unless an adequate water supply is at hand. —Florida Star.

GROWING LOCUST TREES FROM SEED.

By B. O. Longyear, Colorado Agricultural College.

Any person who can secure seed of black or honey locust can readily grow his own trees of these two species. Seeds that have been kept dry, even eight or ten years, will grow almost as readily as those that have been gathered but one year. In either case the seeds are so hard that if planted dry, as one would peas or beans, many of them will fail to germinate, and all of them will be very slow. They should first be treated with hot water, in the following manner:

For about one-half pound of seed, place the seeds in any can or jar that will hold about one gallon and that will not be broken by hot water. Pour about two or three quarts of boiling water upon the seeds, cover, and allow to stand over night. When the water is poured off, it will be found that many of the seeds have doubled in size and become softened. These should be taken out and may be planted immediately, while those that remain hard should be treated in the same manner until all of them have swollen.

Plant in good garden soil, in rows about three feet apart, planting the seed about one inch apart in the case of the black locust, and three inches apart for the honey locust. Cover the former two-thirds of an inch, and the latter one inch deep, and firm the soil upon them. As soon as the plants break through the ground they should be given the same cultivation and irrigation as a crop of corn. The young trees will probably need thinning so as to make them about four to five inches apart in the row. This will give much stronger seedlings than to allow them to grow much thicker.

At the end of the growing season it is best to dig the young trees and plant them in permanent quarters.

TRANSMIGRATION.

One morning Jenkins looked over his garden wall and said to his neighbor:

"Hey, what are you planting in that hole?"

"Oh," he said, "I'm just replanting some of my seeds, that's all.'

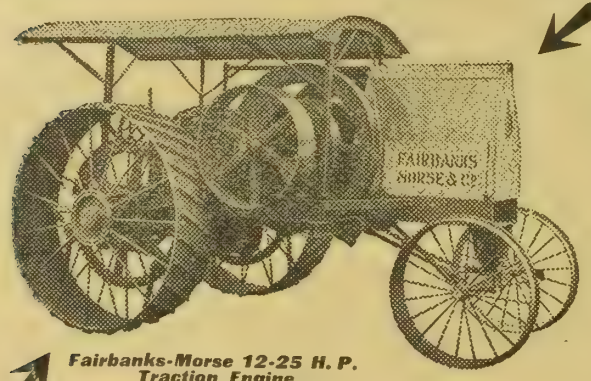
"Seeds!" shouted Jenkins, angrily. "It looks more like one of my hens."

"It is. The seeds are inside."

NATURAL GLADNESS.

Of all the good gifts which ever came out of the wallet of the Fairy Godmother, the gift of natural gladness is the greatest and best. It is to the soul what health is to the body, what sanity is to the mind, the test of normality.—Bliss Carman.

Watsonville's Apple Show prizes will aggregate about $2500.



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Questions and Answers

THE EDITOR AND STAFF

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Bee Moth.

Is the larva or cocoon enclosed foul brood? I have found them in four new hives. I bought six last spring that had never been used before. The bees are all last spring's swarms. The hives which show these cocoons have no honey and but very few bees of young brood. The other two hives have a fair amount of honey and have brood. In front of the affected hives is powdered dust like substance thrown out of the hive entrance.—Subscriber, Sonoma.

There was nothing alive in the letter when it reached the office, but three shells or empty cocoons of the bee moth (Gallearia mellonella) and in no way similar to the foul brood. Plainly from the description of subscriber his four hives are very weak and should be combined to two or possibly one brood. A good strong swarm of bees will not tolerate the entrance of the bee moth. It is possible also that there may be no queen in some of these hives. It would also probably be advisable to partly close the entrance, so it might be the easier protected. The hives should also be looked over to see that there are no crevices which will permit entrance of the moth. Do the sides fit closely to the bottom, and is there a perfect fit of the top? Of course, it goes without saying that you should go thoroughly through all the hives and destroy the worms in every one of these cocoons or any which may be seen crawling about the hives. Another valuable point is to see that your bees are the Italian, for hives of the Italians are seldom infested. This may be accomplished by getting good Italian queens.

Teat Injured.

My cow lacerated one teat on a barb of a wire fence. I sutured the wound and used a tube, but now the milk flows through the part injured. Is it possible to dry that teat without drying the others?—Subscriber, Laton.

It is not advisable to try to check lactation in a single quarter of the udder. Allow the cow to dry off in the ordinary way, then carefully cut away the edges of the false opening and bring the lips of the bleeding wound together with silk sutures. Before operating clean your hands, the teat and the instruments with carbolized water, and after operating remove all blood clots, dry with absorbent cotton, and keep the part protected by coating daily with zinc oxide ointment till healing is complete.

Veterinarian Wanted.

A good veterinarian is needed in our vicinity. Our town has a population of several hundred and is located in a stock raising country. We are twenty-five miles from the nearest town having a veterinarian and forty miles from the next nearest. I think a good veterinarian could do well here. —Subscriber, Ballard.

Considering the small size of your town I doubt if it will be possible to secure a qualified veterinarian unless you offer some special inducements, say in the form of a guarantee that a specified amount of work may be done within one year, depositing a sum to cover a possible deficiency, or find a student who desires to combine veterinary practice and farming. I would suggest that you address your application to the Colorado A. & M. College, Fort Collins, Col.; Ohio State University, Columbus, Ohio; Iowa State College, Ames, Iowa, or other agricultural and mining colleges having veterinary departments. The San Francisco Veterinary College, San Francisco, Cal., might be able to send you a veterinarian.

Cutting Eucalyptus.

Replying to the subscriber who asked as to cutting eucalyptus so that the stump will sprout again, will say that the best time to cut the eucalyptus is when the axe is sharp. I find that they sprout as readily when they are cut in August as in January.—A. E. R., Laton.

Dip for Hens.

We have had several references to the article on dipping poultry which appeared in the issue of Sept. 21st. It was a general argument in favor of a liquid dip for lice and mite troubles, but gave no definite formula. The kerosene emulsion which doubtless all know how to mix, is excellent. A one per cent solution of carbolic acid in water is good. If care is used not to get the solution in the eyes and thoroughly mix it, it is possible that this might be as strong as a 5 per cent solution. A solution made by steeping tobacco stems in water is also an excellent dip.

Hints.

I get so many good ideas through your query columns that I believe it is a good thing for each reader to mention those things which he finds effective or economical in his farm work. I also think we should when we see some recommendation worthless, give it publicity and save others time and expense. This was the case with the fly repellent which Mrs. Reimers of Dinuba gave us information about.

Bloody milk is something which has affected several of my cows. I have always had success by throwing a handful of dry sulphur over the hay in manger or other feed. It has never taken over five or six doses to cure.

For stick-tight fleas I tried the brine treatment on three cockerels. The brine was so strong that it would bob up an egg like a cork. I kept their heads under the brine several minutes and rubbed wattles and ears thoroughly. After twelve hours found the pests just as full of business as ever. The best remedy I have ever tried was to catch them by the tail and drop them down the lamp chimney when the lamp is lighted. These pests are surely a tribulation and hard to cope with. I find it possible to keep them down to some extent by moving hen houses, sprinkling the ground where they were with distillate and setting fire to it. Then spray the house thoroughly with distillate and later return to original place.—Subscriber, Oleander.

Ants in Orchard.

Small red or brown ants are doing much damage to my orange trees. They attack the tree just under the surface of the ground, working on the bark, and in time girdling and killing the tree. Please give remedy.—Subscriber, Holtville.

We believe the subscriber is wrong in giving to the ants credit for destroying his trees. As a rule they are not feeders on healthy vegetable tissue, but if the trees are in heavy soil or where gum disease has caused exuding of gum, the ants will be attracted. If the soil is dug up thoroughly about the trees, and possibly sand filled in close to the trunk, and other treatment as given on page 451 of Cultivator of April 13, 1911, the condition will be corrected, the trees will be made more healthy, and the ants will disappear. If they are the cause of the trouble, spray the ground with a solution of cyanide of potassium and pour a small quantity down their holes. This will soon eradicate them.

Sugar Beets for Stock.

Are sugar beets profitable stock food? How should they be fed?—Subscriber, Imperial.

Sugar beets are excellent stock food, but rather expensive, as their tonnage per acre is less than that of mangels or other large growing beets, and their food value is but little greater. The best way to secure feed

(Continued on Page 353.)

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The newest styles from the country's leading factories. Good, or they wouldn't be here; low priced, or we wouldn't be telling you about them. Just think of the kind of vehicle you want and depend upon finding it here. Whether you buy or not your time will be well spent here. We make it part of our business to treat visitors right.
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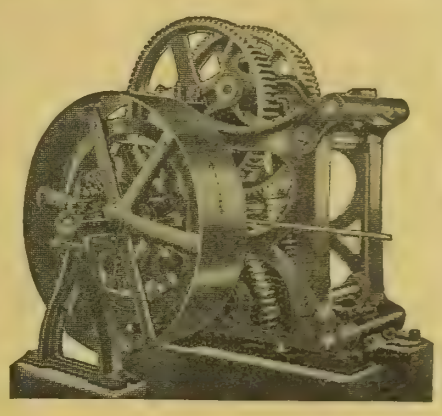

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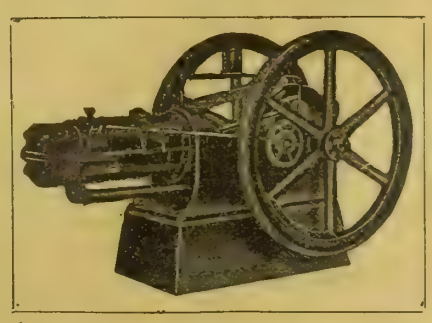

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Stallions for Sale—Acclimated animals. All harness broken, sound and gentle. Leader 40637. Dapple gray, 8 yrs. old. Ladoga Leon, 66619, 2 years old. Dark gray. Dam weighs a ton. Liberty 74310. Black yearling. These three are registered in the Percheron Society of America. Atwood, bay carriage stallion, 2 years old. Solid color. Sired by Athadon, 1st dam by Junio, son of Electioneer. McKinney Don, 2 yrs. old. Solid bay with black points. Sire Stanford McKinney. 1st dam Belladonna, standard by trotting record. 2nd dam by Athaneer. Both well broken to buggy. Minnewawa Stock Farm, Fresno, Cal.

Percheron Stallion For Sale—A registered, two-year-old, black Percheron, sound and gentle, weighs now 1650. Will deliver him at your town for $1000. He will pay for himself first season. Address Chas. F. Thompson, R. F. D. 3, Bakersfield, Cal.

Grapewild Farm Herd of thoroughbred Berkshires. State fair prize winners. Boars and sows of all ages, unrelated. Address A. B. Humphrey, Mayhews, Sacramento Co., Cal.

Three Half Bred Toggenburg Swiss Milk Does, sired by "Bismarck,' also one three-quarter bred doe kid, 6 months old. Price $20 each, or $75 for all. Full description on application to W. E. Hyer, Hemet, Cal.

For Sale—Pure bred New Zealand and Belgian rabbits for breeding purposes. Large stock continually on hand. Prices reasonable. We solicit your correspondence. Mattjetscheck & Crane, Banning, Cal.

Three Holstein Friesian Bulls, splendid young animals, for sale. Well marked and subject to registry. Write at once to Geo. C. Roeding, Fresno, Cal.

Rufus Red Belgians, White Angoras, New Zealand Reds and Silver Grey Flemish Giant Rabbits. Catalog free. Caldwell Bros., Los Angeles, Cal.

Belgian Hares—Fine, healthy breeding stock, for sale cheap. Write for your wants and prices. J. A. Reinhart, Hollister, Cal.

Imported Swiss Toggenburg Buck "Chieftain." Service fee reasonable. Bred grade does for sale. L. C. Buhl, Pomona, Cal.

For Sale—Shorthorn bulls and Berkshire hogs. Bred for size and quality. H. L. Murphy, Perkins, Cal.

Young Jersey Bulls for Sale. G. B. Reeves, Mountain View, Cal.

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Local Representative Wanted—Splendid income assured right man to act as our representative after learning our business thoroughly by mail. Former experience unnecessary. All we require is honesty, ability, ambition and willingness to learn a lucrative business. No soliciting or traveling. This is an exceptional opportunity for a man in your section to get into a big paying business without capital and become independent for life. Write at once for full particulars. Address E. R. Marden, Pres. The National Co-Operative Real Estate Company, L 448, Marden Building, Washington, D. C.

Milk Goat Wanted at once. State quantity and price. Samuel H. Price, 927 Fifth St., San Diego, Cal.

Wanted—500 feet 3-4 and 1 inch old water pipe. H. S. Thornberry, Lordsburg, Cal.

DAIRY SUPPLIES

Have You a Cow?—Have you a creamery? Have you a cheese factory? Write us. Everything used in either a dairy, creamery, cheese factory, or for handling milk, cream, butter or cheese. We are in a position to quote you prices on entire creamery or cheese-making outfits. We make a specialty of only the latest and best sanitary machinery and supplies. Send us a list of what you want, and we will quote prices which we feel certain will interest you. O. J. Weber Co., 225-227 East Sixth St., Los Angeles, Cal.

TREES

Citrus—150,000 sweet and sour seed bed stock, first class in every particular. Also one and two year Eureka lemon, Washington Navel and Valencia nursery stock. Waxed budding cloth by mail or express. Can ship on short notice 1 to 500 yards. 50 yards and up, 28c per yard; smaller quantities 30c per yard; postage added. C. W. Wilhite, Glendora, Cal. Home phone 2062.

Premiums for Early Orders—Trees propagated from famous orchards. Apple 12½c, pear 30c. Specialties, Newton apple, Bartlett pear. Price list on application. Medford Nursery Co., Medford, Ore.

Fine Line of Navels, Valencias and Eureka Lemons for delivery spring of 1911. Contract now and get the first choice. The King Citrus Nurseries, Whittier, Cal.

Inspect our strictly high grade lemon and orange trees for 1912 delivery. Robinson Citrus Nurseries, San Dimas P. O., Cal. Take P. E. San Dimas car to Valley Center, 2½ blocks north.

Several Thousand Each of Washington Navels, Valencias and Seedless Grape Fruit trees, 1 ft. to 2 ft. high, at 35c for this fall's planting. Orders entered now for delivery spring of 1912. Carroll B. Smith, Box 9, Redlands, Cal.

For Sale—Extra choice lemon, Valencias and Navel orange trees, year and two years old, caliper half to three-fourths inch. Will sell in lot of 6,000 for $2,750. Can be left on ground ten months. Address, Box 172, Orange, Cal.

Orange, Lemon and Grapefruit Trees, all first class stock. Special prices to parties planting groves. Edward A. Carvel, 1454 Oak St., Glendale, Cal.

For First Class Valencia and Navel Orange Trees and Eureka Lemons, see A. G. Snow, Oxnard, Cal.

Low Prices on advance orders of deciduous fruit trees. Ballou's Nursery, Pasadena, Cal.

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No irrigation
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The Government now has taken the ground that until there is an authoritative opinion by the Supreme Court of California as to the status of those holding water stock, all matters of final proof in pending cases will be suspended.

The General Land Office holds that, in view of the conflicting opinions of the California courts on the point at issue, the Stratton entry and all others similarly situated shall be suspended until a decision is given by the State Supreme Court governing the disputed points. The final proof in the Stratton land was made Nov. 22, 1907.

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FOR SALE— —$35 PER ACRE
351 ACRES A 1 CITRUS, GRAIN OR STOCK RANCH.

This tract consists of smooth rolling hills small valleys and beautiful slopes, and from the distance presenting a commanding view. The surrounding landscapes are very scenic and present a beautiful panorama. The soil is of a deep brown loam and does not crust or crack, and yet has no excess of sand.

225 acres grew a fine crop of wheat and oats this season; 75 to 100 acres more now growing sage and wild buckwheat can be easily cleared and farmed. Two small orchards in bearing show a fine growth and good yield of fruit without irrigation; good five room house, good size barn, windmill and tank, water piped to house and barn. All under fence. Is 7½ miles south of Escondido.

We have previously advertised this tract in these columns at a ridiculously low price of $20 per acre. But owing to recent developments in electric roads and irrigation systems we have concluded to offer this tract for a short time only at $35 per acre. This land is actually worth for grain farming $60 per acre. Conrad Realty Company, Escondido, Cal.

DAIRY RANCH
FOR SALE.

430-acre river ranch of deep heavy loam, with good improvements, including fully equipped dairy; 110 acres of fine alfalfa, producing from four to five heavy crops; 60 acres of fertile upland, suitable for fruits, berries and alfalfa; 130 acres fine timber and feed land; 130 acres cleared bottom land, raising large crops of grain, all suitable for alfalfa or fruits.

This property is all well fenced and lies within 1½ miles of railroad station with ten passenger trains arriving daily. For price and terms apply to G. E. Brinkerhoff, owner, Modesto, Cal.

For Sale—43½ acres 15 miles from Los Angeles, on Covina electric line, located on boulevard, and 1¼ miles south Baldwin Park. Sandy loam, deep soil and level. Twenty acres in alfalfa, balance grain. Six room house, domestic well and windmill. Forty shares of fine water stock and cheap. This is desirable locality, values steadily advancing, great potato country, but walnuts, oranges and alfalfa do fine also. Price $450 acre, half cash, divide in smaller pieces. Joseph Coleman, 412 First National Bank Building, Long Beach, Cal.

Lindsay District Orange Lands cost less money; produce more than any similar lands in the state. No scale, smut or diseases common to other sections. Crop marketed before the holidays, avoiding all dangers from frost. Ten acre tracts close to Lindsay, $150 per acre. Choice alfalfa lands, abundance of water, $50 and up. For information, call or write, Kious-Whann Realty Co., 235 Mason Bldg., Los Angeles, Cal.

For Sale—A 20-acre farm for $20 cash and $20 a month; possession now; $90 to $125 per acre; your crops pay for the land; rich, level land for alfalfa, oranges, almonds, grapes, cows, chickens; abundance of ditch water for irrigation for $1 an acre a year. Where else can you get this? In Oakdale Colony, near good town and railroad station. Climate delightful. T. Wiesendanger, 408 West Sixth Street. **Los Angeles, Cal.**

Write me for particulars on one of the best orange, lemon and walnut grove propositions you ever saw. 237 acres. 60 acres planted, full bearing. Where water costs absolutely nothing, from the mountains in Temescal, near Corona, Cal. The water right is worth one-half the cost of the ranch. No frost or scale. $10,000 crop on trees. One six-room house. Two four-room houses, barns, etc. All stock and implements. Price $60,000, one-third cash, balance terms, 6 per cent. Jos. Coleman, Room 412, First National Bank, Long Beach, Cal.

For Sale—San Luis Obispo County, 95.31 acres, lot 16, subdivision of Huasna Valley, 12 miles east of Arroyo Grande; well improved, home ranch; 60 acres bottom, inexhaustible water near surface, balance rolling, scattering oaks; school, P. O., coast climate, hog raising, poultry, dairying, principally; $75 per acre, $2,500 time. For particulars address owner, Chas. F. Wright, Huasna, Cal.

10 Acres Rich Soil on Grand Avenue, 1½ miles from Escondido; good lemon or orange land. Price $1,250. Conrad & Company, **Escondido, Cal.**

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o IRRIGATED ALFALFA LAND. o

o LAND WITH WATER ON IT o

o NOW FOR $27 AN ACRE. o

o EASY TERMS. o

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In the Great Yaqui Valley, where your neighbors are the most successful farmers of California, Washington, Idaho, Oregon and Canada.

The rush to Mexico is on. The American farmer is beginning to realize that the only CHEAP land—that is, GOOD LAND—left on the American continent today is in MEXICO. IT'S THE LAST CHANCE. And the American farmer is taking advantage of it.

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Land level as a floor—splendid irrigation system now in operation—railroad transportation — 15,000 acres now under cultivation, and American farmers behind the plows—wheat, barley, oats, corn, cotton, alfalfa, hogs.

Buy NOW—later on you'll pay more.

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For Sale—
THE ORANGE GROVE MAN.
Large list of orange groves in best districts. Seven years' experience in growing oranges.

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The Best Bargain Yet—A good, well improved, money making farm of 56 acres, 2½ miles from Arroya Grande, Cal. A prosperous little town—no saloons. Five miles from Pizmo Beach, the finest beach in California. Free rural delivery. The house alone cost $2,000. Good barn and outbuildings. Fine roses. Walnuts and oak trees around house. Assorted berries and fruits. Plenty wood for fuel. Plenty of fine soft water. No irrigation required, consequently no danger of Bermuda grass or other foul weeds. Owner must have the money at once, hence the sacrifice. Price $6,500; $3,000 cash, balance two years, 8 per cent. Also an 80-acre tract of fine, level, loamy land, 50 acres of which is No. 1, in northeastern part of Santa Barbara County. Will grow alfalfa, vegetables, fruits, cotton, etc. No alkali or hardpan. Free timber 1½ miles away. Elevation 2,500 feet. No extremes of heat, cold or storms. Can be irrigated if necessary. $600 takes it. Same owner as above. Wm. T. Mantz, Maricopa, Cal.

For Sale—Five acres, two miles south of Monrovia, half set to deciduous fruit; plenty of mountain water and six-room house and barn. Forty acres at Corcoran, five-room house. B. F. Houser, Monrovia, Cal.

For Sale—Near Lancaster, Cal. Bargains in improved and unimproved land. Also relinquishments for sale or trade. Some homestead land. A. S. Burnham, Box 451, Lancaster, Cal.

Apple Orchards—Large and small, in the only apple producing section in California. The greatest section west of Missouri River. Write for booklet. Geo. W. Sill & Co., Watsonville, Cal.

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560 Acres. $25 Per Acre.
Stock ranch; good rich soil; good buildings; plenty water; fine orchard; in line of new electric road. Address Conrad & Company, Escondido, Cal.

For Sale or Exchange for Los Angeles or Orange County acreage. Five acres in city of Santa Cruz, all in fruit, well improved. William Richard, 438 River St., Santa Cruz, Cal.

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Plants of all kinds, wholesale and retail, at Las Palmas Greenhouses, Palo Alto, Cal. Contracts solicited. Let us know your needs at once

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The Goodacre Strains—Our Red chicks are hatching strong, only $12 per 100. Do you want Ancona chicks at $15 per 100 or 18c each? How about yearling males at $3 for Leghorns and Anconas; $5 to $7 for R. I. Reds and Buff Orpingtons? Eighteen Leghorn hens and cock for $20; R. I. Red young cock and four hens, $12; Buff Orpington young cock and four hens, $14. Write for our summer price list. Goodacre Bros., Compton, Cal.

Standard Poultry Yards—Are booking orders for eggs from the best Cook or Kellerstrass White Orpington chickens on earth, from $2.50 to $5.00 per setting and from $15.00 to $30.00 per hundred. Baby chicks 50c each. Six-weeks-old chicks $1.00 each. E. C. Worden & Son, 4004 University Blvd., San Diego, Cal.

See Here. If you want some of the best stock in this world, we have it. All thoroughbred S. C. R. I. Reds, Black and White Minorcas, Crystal White and Black Orpingtons and Barred Rocks. Orders filled as catalogued. Baby chicks, hatching eggs, cockerels, and a few pens. Address, Monte Rio Poultry Yards, Newcastle, Cal.

For Sale—Pullets, cockerels and yearling White Orpingtons (Cook strain), Black Minorcas (Northrup strain), White Minorcas, R. I. Reds (Tompkins strain), pure bred. C. U. Chamberlin, Los Gatos, Cal.

Day-Old Chicks, Barred Rock and White Leghorns, good laying strain. Order now to insure early fall delivery. The Fairmount Hatchery, 29 B Rural No. 1, Santa Cruz, Cal.

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Just Hatched White Leghorn Chicks every month, from select, heavy laying, mature stock. No pullet eggs used. Lodi Hatchery, E. Elm St., Lodi, Cal.

White Leghorns—Buff Orpingtons. Bred for beauty and great egg production. Grand lot of both old and young stock for sale. Prices reasonable. Write your wants. Model Poultry Farm, Box H, Irvington, Cal.

Hicks Jubilee Hatchery, now booking orders. Write us your wants. We use eggs from first-class stock only. Try us. W. J. Hicks, Petaluma, Cal.

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Western Hatchery—We are booking orders for day old chicks hatched from well selected, well bred stock. Write for prices and terms. Western Hatchery, Western Ave., Petaluma, Cal.

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Thoroughbreds—Buff Rock and Buff Leghorn pullets. Also a few Buff Rock cockerels, special prices. G. E. Candee, Ellenwood Drive, Eagle Rock, Cal.

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The Luedkes—Incomparable R. I. Red high record layers. Eggs by the hundred $6.00. Fancy matings $3.00 for 15. P. O., Anaheim, Route 1.

S. C. Rhode Island Reds—Fine big pullets for sale at $1 each. L. Haynes, Madera, Cal.

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Barred Plymouth Rocks—The kind that "win and lay." Eggs and stock for sale. C. H. Vodden, Los Gatos, Cal.

Kellerstrass Crystal White Orpington Eggs, $2 per 13. R. L. Warren, National City, Cal. R. D. 1.

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We have a few genuine "Rankin" strain Mammoth Pekin drakes to spare that will add a pound each to your next lot of ducks. Grand big fellows, fit to show. Price two to five dollars each. Eggs from our best pens, $10 per hundred, $2 setting. Long Beach Poultry Ranch, Long Beach, Cal.

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Indian Runner duck eggs from stock carefully bred for heavy layers. Price $1.50 per dozen. Drakes for sale. Mrs. Fred Chester, Santa Rosa, Cal., Route 2.

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Catalogues for the seed and nursery trade, the live stock and poultry industries, are a specialty with us. Two thousand illustrations to select from. Write for prices and samples. The Kruckeberg Press, 237 Franklin St., **Los Angeles.**

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For Sale—Second hand windmills, tanks, pumps, engines, farm machinery. OUR SPECIALTY—NO WORRY. MATERIAL GUARANTEED. WINDMILL OUTFITS. Fine stock 8, 10 and 12 ft. steel mills with or without tanks at about half price. ENGINES. 1½ H. P. Fairbanks, $47.50; 4 H. P. Holly, $48; 6 H. P. Coffield complete with centrifugal pump and pipe, $195. 6 H. P. Fairbanks; 22 H. P. Foos, $390; 10 H. P. steam engine, $45; 2 H. P. steam engine and boiler; 8 H. P. boiler. TANKS. All kinds and sizes of second hand and new tanks, from 50 to 50,000 gal. Save you half and guarantee them. FARM MACHINERY. Walking and riding plows, Fresno, slip and wheel scrapers, spike tooth, spring tooth and disc harrows, mowers, two horse tree sprayer, Delaval cream separator, dry washer, seed sower, fruit crusher. WAGONS, BUGGIES, HARNESS. Outside shipments receive personal attention. Prices very lowest good serviceable material can be furnished for. Get others' prices, then compare material and prices with us. DEMMITT CO., 120 N. Main, Los Angeles.

For Sale—Complete pumping plant; fine for subdivision or irrigating; in part as follows: 25,000 gal. redwood tank, 30 ft. tank stand, 7 inch discharge pipe to ground, vertical centrifugal pump and 20 H. P. engine. Will sell all or part very cheap. Must be moved inside 10 days. Demmitt Co., 120 N. Main, Los Angeles, Cal.

Walnut Growers, Attention—I have a Meier No. 2 walnut huller for sale, but little used. I had to dig up my trees is reason for selling. It is a money saver, does good work. Less than half price, $30 f. o. b. San Diego. Address, N. P. Eisenmayer, Nestor, Cal.

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WANTED—COUNTRY PROPERTY.

We want

Unlisted property, to which we give our personal attention. List it with us if you want quick money.

We have for sale improved farms and ranches in all parts of California. If you want to buy or trade, write us, giving details as to location wanted. We make a specialty of financing water projects.

Write. Phone. Call.
Sunset Investment Company, 418 Union Trust Building, Los Angeles.
Phone Home F 2310.

Cash for Your Property, any kind, anywhere. If you want to buy, sell or exchange, address Northwestern Business Agency, Minneapolis, Minn.

MISCELLANEOUS

Free—"Investing for Profit" Magazine. Send me your name and I will mail you this magazine absolutely free. Before you invest a dollar anywhere, get this magazine—it is worth $10 a copy to any man who intends to invest $5 or more per month. Tells how $1,000 can grow to $22,000; how to judge different classes of investments; the real power of your money. This magazine for six months free if you write today. H. L. Barber, Publisher, R. 430, 28 W. Jackson Boulevard, Chicago, Ill.

For Sale—Pigeon guano, at the Los Angeles Pigeon Farm; the best fertilizer for orchards, especially for young trees. It saves money in freight and labor, as one ton is equal to 15 or 20 tons of stable manure. In carload lots, $10 per ton; small orders 50c per sack. Address, J. Y. Johnson, General Delivery, Los Angeles. Phone East 1652.

For Exchange—for lemon trees for next spring's planting. Good- as new E-M-F 30 Auto, 1911 top, glass front and speedometer. Shock absorbers. New tires. Ward Realty Co., San Dimas, Cal.

The Bell Agency. A general public service bureau, 833 Market St., San Francisco. Attends ot anything for anybody. Bank references. E. D. Dement, Mgr.

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Write for prices.

Valley Seed Co.

706 J St. Sacramento, Cal.

Agents for Mococo Fertilizers

Now Is Your Chance To Buy Cheap

See Big Auction Ad on Page 358

Briggs & Weber
Auctioneers

SUGAR BEETS FOR STOCK.

(Continued from Page 351.)

from sugar beets is to take them to the sugar factory, then buy back the pulp after the sugar is extracted. This, of course, is impossible in your section, so we would suggest growing the larger beets, which are of great value because of their succulence and corrective properties. Henry's "Feeds and Feeding" gives sugar beet tonnage as 23.8 with 85 per cent water, while the "half sugar mangel" has 26.6 tons with 88.9 per cent water. "It has less dry matter per acre than the sugar beet. Only one-half the labor is required to harvest the mangel, and, furthermore, the root keeps better than the sugar beet. The mangel is valuable for all kinds of farm stock, excepting possibly the horse." However, for cost and return per acre, all root crops are not to be compared to soiling crops.

"Why do you not hold up your head, as I do?" inquired an aristocratic lawyer of a farmer.

"Friend," said the farmer, "look at that field of grain yonder—all the valuable heads hang down, while those that have nothing in them stand upright."

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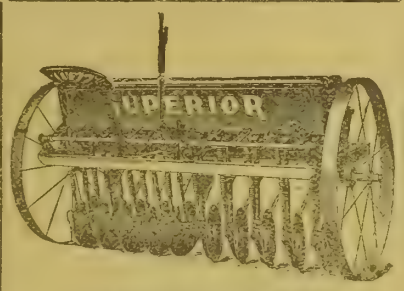

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Outshines city gas or electricity. Simple, noiseless, odorless, clean, safe, money-saving. Guaranteed. Write nearest office for catalogue M and learn how to get an Aladdin Mantle Lamp FREE.

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Thoroughbred Poland China Swine
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High Grade Stock of Best Strains.
Young Stock for Sale.

M. Bassett ***Hanford, Cal***

Veterinary

Answers in this column by Fred G. Matthews, M. S., D. V. M., 1232 Central Ave., Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Forearm Cut.

My horse was cut to the bone on the forearm by barbed wire, but healed without being sutured. Later matter collected above and below the scar, opened and discharged until treated with rowels. The wounds have healed, but the limb is twice as large as normal and feels hard. Lameness is very pronounced. Kindly advise me whether to allow him to run in pasture or tie him up in the barn, and also give treatment to remove the hardness and reduce the limb.—Subscriber, Ceres.

It is very doubtful if it will be possible to accomplish the end you desire, unless I be mistaken in estimating the time elapsed since the injury occurred at four months or longer. The muscles involved were completely severed and their function permanently impaired, hence I presume the limb is carried in a dragging manner, and also the scar extends so deeply into the region that the return flow of lymp is more or less obstructed, consequently the accumulation of fluids has resulted in the enlargement of the limb below the wound. Have your druggist mix two drachms of red mercuric iodide and two ounces of cerate of cantharides, adding turpentine to make a thin paste. Clip the hairs from the limb and apply a little of the paste to the forearm from the scar to the knee and rub briskly to insure an even distribution of the medicine. Then tie the horse so he cannot reach the part with his mouth. After twelve hours wash with warm water and soap. Repeat every two weeks if results justify it. The horse will do better in the pasture.—F. G. M.

Fistula.

A fine four year old mare, not broken to work, has an enlargement on each side of the withers above the shoulders. They appeared six months ago. Is this a fistula or has she run under a tree and bruised the withers? —G. D. L., Stony Ford.

Fistula often starts in this manner, but it is possible that the withers were bruised by the animal passing under a tree or rolling against some rough object. Make a large opening in each of the enlargements, insert the finger to trace the pus to its source, and inject a two per cent solution of permanganate of potash into the tracts or cavities. When clear of pus pack the wounds with strips of cloth saturated with a mixture of equal parts of sweet oil and turpentine. Repeat this treatment daily.—F. G. M.

Eye Trouble.

The past two weeks a young colt about two months old has had a white scum over the ball of one eye. What can be done for it?—Subscriber, Tulare.

If there is a free discharge from the eye, examine carefully for injuries or foreign particles such as hairs, chaff, etc. Have your drugguist mix iodoform half scruple, calomel one scruple, boric acid one drachm and powdered sugar one ounce, and place a pinch of the mixture in the eye twice daily.

Cough.

A dog, two years old, took to coughing as if trying to dislodge something from his throat, but we could find nothing then. The dog finally died. We sometimes sponged him with kerosene for fleas. Could that have caused the trouble?—R. B., San Marcos.

No. A cough not accompanied by vomiting is usually to be attributed to disease of the air passages or the lungs.—F. G. M.

A little girl hearing her parents discussing how to keep milk from souring said: "Well, I'll bet it wouldn't sour if you left it in the cow."—Hoard's.

Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 225-227-229-231 East Sixth Street, Los Angeles.

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We call particular attention again this season to the necessity of ordering early to get your needs fulfilled.

TREES

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Here are three reasons why you should correspond with us before you order any stock for this year's planting.

FIRST—Quality is one of the essential points. All our stock is grown under the personal supervision of men thoroughly trained and versed in nursery work. We insure every piece of stock we sell being "true to name."

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THIRD—The completeness of our stock. We grow everything that grows—Fruits, Berries, Grapevines, Ornamentals in deciduous and evergreen trees, Shrubs and Plants; Palms and Roses.

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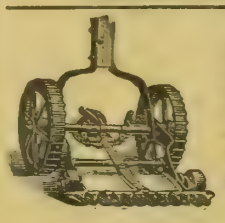

There are three things that destroy your lawns Dandelions, Buck Plantain, and Crab Grass.

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Clipper Lawn Mower Co
Dixon, Illinois

Knockdown Pattern
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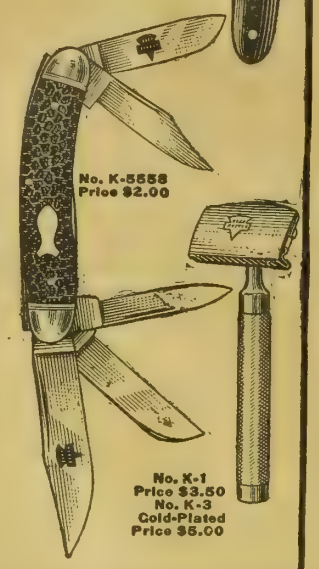

The Temper's the Thing

WHEN you buy a pocket knife—a razor or a safety razor—any cutlery, in fact, how can you tell whether it is going to give satisfactory service? You can always examine their external points, such as handles, linings, rivets, springs and finish, but the *temper* is the important thing, and in ordinary cases you can tell nothing about the temper until actual use shows it to be good or bad. Keen Kutter Tools and Cutlery have been the standard of America for over 45 years as a complete line—every article of the highest quality.

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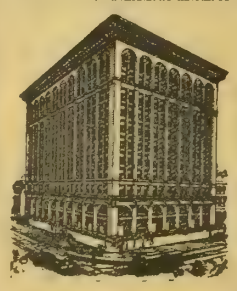

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Household Department

THE BOOK OF MEMORY.

My grandma has a curious book she
often lets me see
When in the dusk I leave my play to
sit upon her knee.
I cannot touch the book at all, but
shut my eyes up tight,
While grandma tells the pictures, and
I see them clear and bright.

I see the dear old farmhouse where
grandma used to play,
The barn, with all the cattle, and the
fragrant mows of hay,
The pets that grandma used to have,
and all her queer old toys,
And the little country schoolhouse
full of merry girls and boys.
And there are other pictures, too,
which make my grandma sigh;
She says I must not see them now, but
wait till by and by;
But, though she thinks they're far too
sad to show to little me,
She's sure they all look brighter when
I'm sitting on her knee.

My grandma says I'm making a book
to be my own,
And that I'll often look at it and smile
when I am grown;
And then I'm sure the picture that I
like the best to see
Will be myself, in the dusk on grandma's knee!

H. G. Fernald, in Young Days.

"PHILIP, MY KING."

"Philip, Philip my King."

The girl's bright face grew tender as the last notes of the old song died away and her white fingers touched the keys softly. When the music had ceased, the man beside her stooped and kissed her red lips lovingly, almost solemnly. The love of this pure girl seemed such a holy thing that its possession sometimes almost frightened him.

She gave him a merry glance as she said, "You must not bother me any longer. I have a great deal to do that will never be finished if I sit here all day singing flattering songs to you."

"May I not sit at your majesty's feet and watch you if I am very good?"

She shook her head. "No," she replied. "You are a great hindrance to sober industry. You are of too frivolous a nature to respect serious undertakings."

He bowed low in mock humility. "Well, I will go where I am better appreciated," replied her lover, rising to his feet and walking leisurely away.

Margaret watched him out of sight with a smile on her lips, and with no premonition that she would never again see that erect carriage and buoyant step she loved so well.

The afternoon was waning and the shadows were growing longer when Margaret saw George Allen coming hurriedly down the street. As he came nearer she saw that he looked pale and troubled. Flinging down her work she ran out to meet him. "Oh, George!" she cried. "You bring bad news! What is it?"

He took both her hands in his and said, "Margaret, dear friend, be brave. Philip has had a serious accident. He saved a workman's life at the risk of his own."

Margaret's lips whitened. "Is he dead?" she whispered. "Oh, no, no, he is alive but badly hurt." She clung to him for a minute. How he longed to take her in his arms and comfort her. He could not remember when he had not loved her, and in every plan of his life she had a part. But she belonged to Philip and his part was to serve them both.

With the first snowfall Philip was around again but so changed. His right arm and leg were gone and his face showed the traces of pain and ill health. Most of his savings were swallowed up by his illness and he could never hope to be well again.

"Never mind dear," said Margaret bravely. "I will work for us all." He had offered Margaret her liberty, and even besought her to give him up but she refused. She simply kissed him, saying "A crust with you, dear, is better than riches with any other man."

As time went by Philip grew stronger but seemed greatly changed. He would sit for hours silently brooding over his misfortunes. All his happy, sunny nature seemed changed. Stranger still, he grew indifferent to Margaret and was sometimes almost rude to her.

The maternal instinct, dormant in most women, was aroused in Margaret by his misfortunes, and she loved him as she never had before. "I must be very patient," she thought, "and remember what he is passing through. I could not bear it as well as he does."

One afternoon as she sat by the window sewing, a boy who was passing threw a letter into her lap. The note was short and read as follows:

"Dear Margaret:

Do not blame me too much for these written words which cause me as much sorrow in the writing as they will you in the reading. Dear friend, you and I must live our lives apart. I find that I do not love you as a man loves the woman he marries. I have been a long time coming to this knowledge and think it only right to tell you. I shall always be your grateful friend. Forgive and forget.

Philip."

Margaret was a proud woman of New England stock. She neither fainted or cried out, but read the letter through twice, then tore it into bits and threw it into the fire. She walked to her room with steady feet. But when the door was locked she fell on her knees beside her bed. She raised her clasped hands toward heaven crying passionately, "Dear God, dear God! where have I failed?" Her self-effacing love did not for a moment blame him. Some way she had failed him, some way she had been found wanting.

She was alone for the day and alone she fought the bitterest battle of her life. Only He who listened to her bitter cry, knew what she endured. At last, strong in His strength, she arose calm and serene. In her face was a new beauty, a new trust and peace. She sat down at her desk and wrote:

"Dear Philip:

I do not blame you, for love cannot be compelled. You did right to treat me frankly. If I can ever help you I will. God bless and keep you.

Margaret."

After two years had gone by George renewed his attentions and was accepted.

As time went on Margaret grew happy, for her husband was kind and devoted, and her nature was too sweet and wholesome to withold love from one who gave her all. Little children came, two sturdy boys and a winsome girl.

In the meantime Philip's mother died, and an old aunt came to live with him. He eked out a scanty income by teaching such pupils as would come to him. Margaret's children were among his pupils and loved him as did all children. He had changed since his accident. Instead of the happy, joyous man he had been, he became quiet and sad, but gentle and tender to a great degree. There were lines of sorrow in his face, and his eyes had a tired look in them that showed sadness hidden from the world and borne alone.

He became a power in the little village, a settler of disputes, a peace

Do You Want Cows?

See Big Auction Ad on Page 358

Briggs & Weber Auctioneers

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For twenty years the Common-Sense Ear Drums have been giving good hearing to hundreds of thousands of deaf people, and they will do the same for all who try them.

Every condition of deafness or defective hearing is being helped and cured, such as Catarrhal Deafness, Relaxed or Sunken Drums, Thickened Drums, Roaring and Hissing Sounds, Perforated or Partially Destroyed Drums, Drums Wholly Destroyed, Discharge from Ears—no matter what the cause or how long standing the case may be, there is hope of good hearing for all the afflicted deaf.

The Common-Sense Ear Drum is made of a soft, sensitized material, comfortable and safe to wear. They are out of sight when worn, and easily adjusted by the wearer.

Good hearing brings cheerfulness, comfort and sunshine into the life of the lonely deaf.

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H. B. MATTHEWS

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maker, a father confessor to all who suffered or sinned. And so his beautiful, blameless life went on as the years went quietly by, till one day word came to Margaret that he was ill. At twilight a neighbor brought word to Margaret as she and George sat at their fireside reading. "Philip is dying," the man said, "and he wants to see you, Margaret." She went across the moonlit fields.

Philip's eyes were closed, but as Margaret bent over him he opened them and smiled. After a moment's silence during which she bent with her cool hand on his forehead, he spoke. "Margaret, have you been happy with George?"

"Yes, Philip."

"Thank God!" said the sick man fervently. "Sit down by me, Margaret, I want to tell you something before I die. I wish I were brave enough to carry this secret to the grave with me, but I have borne the burden so long, so long, that I must clear away all misunderstanding before God calls me away."

"Dearest, I could not see you grow old and worn before your time, I could not be a burden where I longed to shield, I dared not condemn you to a life of poverty and toil; yet I knew how true you were and that you would never give me up while you believed I loved you. So as the physician gives the bitter draught to save I wrote that cruel letter to save you.

"Oh, my God! the agony of seeing your wistful look when I pretended coldness! and that letter! My heart bled as I wrote it. Selfish man that I was, I half hoped that you would discern the truth. Yet I, too, have been happy, happy in God, in your happiness, and in trying to help others. Life has been lonely but not barren."

He ceased speaking. Margaret sunk on her knees beside him and laid his head on her bosom. "My Philip," she whispered, "noblest and best! I never blamed you! but Oh how little you know of a woman's nature. Every sorrow borne for you would have been a joy, every care a precious possession. You robbed me of a woman's birthright, to suffer and sacrifice for her own. Philip my king."

She put her arms around him and he held her in a close embrace. He spoke but once more, just saying, in a tone of ineffable weakness, "Good night, Margaret."

Back across the moonlit field she walked, but not alone, for Love and Youth walked with her. There was a new dignity in her step and a solemn joy in her face. She had come into her birthright.

She paused in the moonlight. There lay her home, there was the lamplight streaming from the window. In there were the husband and the children who loved her and whom she loved. She looked up at the moonlit sky, up there were God and Philip. She smiled through her tears as she murmured, "Philip, my king!" then turning swiftly she went into the house and shut the door.—American Cultivator.

ALL THROUGH A HYPHEN.

A certain member of congress was to make a speech near Chicago, but was unable to do so because the heavy rains had destroyed a portion of the branch railway. Accordingly, he sent this telegram: "Cannot come. Wash-out on line." In a few hours the reply came: "Never mind. Come anyway. Borrow a shirt." — Every Woman's Magazine.

There is no duty we so much underrate as that of being happy. By being happy, we sow anonymous benefits upon the world which remain unknown even to ourselves, or when they are disclosed, surprise nobody so much as the benefactor. A happy man or woman is a better thing to find than a five-pound note. He or she is a radiating focus of good will and their entrance into a room is as though another candle had been lighted. We need not care whether they could prove the forty-seventh proposition; they do a better thing than that, they practically demonstrate the great theorem of the Liveableness of Life.—Robert Louis Stevenson.

Here's a Stone Roofing

Plant of Robinson Clay Products Co., Akron, O., covered with J-M Asbestos Roofing for over twenty years.

Think how long it will last!

J-M Asbestos Ready Roofing is literally a sheet of pliable stone—with the lasting qualities of stone.

Also with the fire-proof, rust-proof, rot-proof and acid-proof qualities of Asbestos. And—like all stone—it *never* needs painting.

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We can tell you of many buildings—give you the names of the owners—on which this roofing, without any painting or other protection, has withstood the wear and tear of nearly a quarter of a century and is in good condition today.

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San Francisco-Los Angeles Produce Markets

Los Angeles Market

LOS ANGELES, Oct. 11, 1911.

Butter.

No change in butter quotations, but demand was firm all along the line.

Prices to trade 2½c in advance of the following Produce Exchange quotations:

Extras	27½
Firsts	25
Ladies	23
Country	20

Cheese.

Local Anchor	16
Oregon Daisy	16½
Northern Fresh	16
Domestic Swiss	18
Imported Swiss	32

Eggs and Poultry.

Good outlet for limited receipt of strictly fresh. All grades are being taken up as offered.

Paying prices f. o. b. Los Angeles are:

Local ranch, candled	44
Case count buying price	40
Eastern	32@34
Eastern storage	25@26
Pullets	26

Dealers pay for live poultry f. o. b.:

Hens, per lb	13@17
Roosters	8
Broilers	17
Fryers	14
Roasters	14
Turkeys	21
Ducks	12
Geese	12
Guinea hens, doz	4.00
Squabs, doz	1.75

Live Stock.

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs	7¼
Prime steers	6
Heifers	6
Calves, per lb	6½
Sheep, ewes, per head	4.75
Lambs, per head	3.75@4.25
Wethers	5.00@5.50

Potatoes.

Wholesale prices are:

Sweets, yellow, ctl	2.00
Highlands, ctl	1.30@1.65
Salinas	175@185

Onions.

Wholesale quotations:

Australian Brown, ctl	1.35
Silverskins, sack	1.75@1.85
Yellow Danvers, ctl	1.35
Garlic	5@6

Vegetables.

Wholesale quotations:

Artichokes, northern, doz	90@1.10
Beets, doz bunches	25@30
Bell peppers, lb	4@5
Brussels Sprouts, lb	10
Beans, Limas	7@8
Green chilis	3@5
Chilis, red	15@16
Cucumbers, lugs	50@60
Cabbage, sack	75@85
Cabbage, red, lb	3
Cauliflower, doz	1.00@1.25
Celery, new, crate	1.50@1.75
Carrots, sack	90@1.00
Corn, lug	45@60
Egg plant	3@5
Horseradish, lb	13½
Onions, green, doz bunches	20@25
Kohl-rabi, doz bunches	40
Leeks, doz.	45@50
Lettuce, crate	90@1.10
Mushrooms, lb	50@1.00
Oyster plant, lb	15@20
Okra	6@8
Peas, lb	5@7
Parsnips, doz. bunches	45
Parsley, doz bunches	25@30
Turnips, sack	90@1.00
Radishes, doz bunches	15@20
Rhubarb, Strawberry	1.00@1.25
Spinach, doz	15@20
Squash, summer	30@40
Spearmint, doz	25@30
Tomatoes, lug	25@45
Turnips, sack	1.00@1.25
Watercress, doz	35@40

Citrus Fruits.

Valencias	3.50@4.00
Grapefruit	2.00@4.00
Lemons	2.00@3.75
Limes, hundred	1.25

Fresh Fruits.

Wholesale prices on the market are:

Alligator pears	1.00@1.25
Apples, Skinners	1.00
Apples, Spitzenburgs	1.65@2.00
Jonathans	2.35@2.50
Apples, Crab, lug	1.50
Bananas	4@4½
Casabas, crate	90@1.00
Cantaloupes, small	75@1.00
Cantaloupes, large	1.50@2.00
Figs, box	75@1.25
Grapes, Thompson Seedless, lb	3
Grapes, Black Hamburg, lug	65
Grapes, Muscats	65
Grapes, Tokays	80@90
Loganberries	6@8
Peaches, lug	60@90
Pineapples	7@8
Pomegranates, lug	1.50
Plums, Clymans, lug	1.50
Plums, Tragedy	1.50
Pears, Bartlett, lb	5
Quinces, lug	1.00@1.25
Blackberries	8@9
Raspberries	10@12
Strawberries	4@8
Watermelons, lb	¾@1

Dried Fruits.

Wholesale prices to retailers are:

Evaporated Apples, fancy, lb	12@12½
Apricots	16@17
Figs, box	80@1.75
Peaches	11@12½
Nectarines	12
Pears	12@13
Prunes	8½@14
Plums	10

Beans Dried.

Wholesale quotations:

Limas	6.00
Black eyes	4.50@5.00
Pinks	4.25@4.50
Lady Washington	4.25@4.40
Small white	4.25@4.50
Garvanzas	4.50
Bayous	4.50@5.00
Lentils	6.00@7.00
Mexican Reds	4.75@5.00

Nuts.

Wholesale quotations:

No. 1 soft shell walnuts	14
No. 1 H. S. walnuts	13½
No. 2 walnuts	11
Almonds, IXL, lb	19@20
Pecans, polished	15@17
Peanuts, Eastern	8
Peanuts, California	6
Pine Nuts	18

Honey.

Wholesale quotations:

Extracted water white	8½
Extracted light amber	7½
Comb water white	16@17
Light amber	13@14
Beeswax	30

Hay.

Buying prices f. o. b. cars Los Angeles are:

Barley hay	13.00@14.00
Wheat hay	12.00@13.00
Tame oats	15.00@17.00
Alfalfa	13.50@14.50

Grain.

Wholesale selling price f. o. b. Los Angeles:

Wheat, new, cental	1.75@1.80
Corn	1.70@1.95
Kaffir	1.80
Millet	3.75
Popcorn	4.75@5.00
Egyptian corn	1.80
Red oats	1.80
Seed barley	1.50
Milo	1.90

Feed Stuff

Wholesale selling price f. o. b. Los Angeles:

Alfalfa meal	1.15
Beef scrap	3.10
Bone meal	2.05
Charcoal	2.00
Cracked corn	1.90
Cracked wheat	1.90
Shorts	1.95
Bran	1.70
Oil cake meal	2.50
Feed meal	1.95
Rolled barley	1.80
Middlings	1.85

San Francisco Market

SAN FRANCISCO, Oct. 10, 1911.

Butter.

Butter was firm with advance of a cent and a half on extras, lower grades also commanding better prices.

Prices to trade 2½c in advance of the following Produce Exchange quotations:

California extras, lb	28½
Prime firsts	25½
Firsts	25
Seconds	23

Cheese.

Cal. flats	12@13½
Cal. Y. America, fy, new	15@16
Oregon, fancy	13½

Eggs and Poultry.

Eggs have declined a half cent a day for the last four days, now standing at 40 cents for fresh ranch extras.

Official quotations of the San Francisco Wholesale Dairy and Produce Exchange are:

Fresh ranch extras	40
Firsts	39
Seconds	21
Eastern seconds	16
Select pullets	32½
Hens, doz	4.00@9.00
Fryers, doz	4.50@5.50
Ducks	4.00@7.00
Broilers	2.50@4.00
Roosters, doz	4.00@9.00
Geese	2.00@3.00
Goslings, pr	2.00@2.25
Pigeons	1.50@2.00
Turkeys	24@27
Squabs	2.00@2.50

Live Stock.

San Francisco prices, gross weight:

Steers	4@5¾
Cows and heifers	3@4½
Calves, lb.	5@6¾
Hogs	7@7¼
Wethers No. 1	3¾@4
Milk lambs	4¾
Ewes, No. 1	3¼@3½

Potatoes.

Wholesale market quotations:

River whites, ctl	90@1.10
Alamedas	1.50@1.75
Sweets, ctl	1.75@1.85

Onions.

Yellow, new	75@85
Garlic, new, lb	3@4

Vegetables.

Wholesale quotations:

Asparagus, box	1.00@1.75
Beans, string	2@4
Beans, wax	1½@2½
Limas	2@3
Bell peppers, box	75@1.00
Cabbage, ctl	75@85
Cauliflower, doz	50@60
Carrots	70@75
Cucumbers, box	40@65
Corn, sack	50@1.25
Chili peppers, box	25@50
Celery, crate	1.50@2.50
Egg plant, box	25@40
Lettuce, crate	75@2.00
Okra, box	50@85
Peas, sack	1.75@2.00
Hubbard squash, sack	50@75
Summer squash, lug	40@75
Squash, Marrowfat	50@65
Tomatoes, box	20@40
Turnips	60@75

Citrus Fruits.

Valencias	3.25@4.50
Grapefruit	3.00@4.50
Lemons	1.50@5.50
Limes, Mexican	5.00@5.50

Fresh Fruits.

Apples, Bellefleurs	75@1.00
Apples, Newtons	1.00@1.25
Cantaloupes standard	40@1.40
Nutmegs, large, crate	35@75
Figs, layer, single	25@60
Grapes, Thompson Seed., crate	40@50
Grapes, blk	40@50
Grapes, Muscat, box	40@50
Grapes, Tokay	40@50
Pears, Bartlett, box	75@1.75
Peaches, box	40@1.25
Plums, box	40@60
Prunes, box	75@85
Quinces, box	50@75
Loganberries, chest	4.00@6.00
Blackberries, chest	5.00@6.00
Raspberries, chest	4.00@8.00
Strawberries	3.00@5.00
Pineapples, Hawaiian	2.00@3.50
Bananas	1.00@1.50
Watermelons, doz	1.25@2.00

Dried Fruits.

FRUITS—1911 crop, f. o.b., carload lots, per lb.—Apples, 8½@11c; Apricots, 14@17c; Peaches, 9¼@11c; Prunes, bulk basis, 5¾@7c; per lb., 4¾@10c, with a premium of ½@1c on large sizes; Figs, 5@6c for White; Pears, 10@13c.

RAISINS—1911 crop: Seeded, per pkg. —Fancy, No. 16, 7c; Choice, No. 16, 6¾c; Loose Muscatels, in 50-lb. boxes—Standard, 4-crown, 6½c; Muscatel, 5¼@5½c; 5½c; do, 2-crown, 5¼c. Seedless—Muscatel, 5¼@5½c; Sultanas, 6@6¼c; Sultanas, 6@6¼c; Thompson's 7@7½c.

Nuts.

Walnuts, No. 1 soft shell	14
Walnuts, No. 1 hard shell	13½
Almonds, '10, N P U	16@16½
Almonds, '10, Nonp	18@18¾
Almonds, '10, I X L	16½@17¼
Pecans	14@17
Chestnuts, California	6@8
Peanuts	5@5½

Beans Dried.

Limas	5.00@5.20
Pink	4.00@4.10
Black eyes	3.50@3.60
Small white	3.80@3.85
Large white	3.65@3.75
Kidneys	4.50@4.60
Garbanzos	3.00@3.25
Bayou	3.40@3.65
Horse beans	2.60@2.75
Red Mexicans	4.50@4.60
Cranberry	3.30@3.75

Hops

Hops, coast, 1910	30@34
Hops, 1911	35@38
Hops, Oregon, 1911	35@38

Honey.

Water white, comb, '11	15
Dark comb	12½
Extracted white, '11	9@10
Extracted dark	6½
Beeswax, lb	24@30

Hay.

Scott, Magner & Miller say:

Arrivals of hay for the week just ending amounted to 3450 tons; somewhat of a decrease from last week. The most of this consisted of alfalfa from the river banks.

Grain hay is now entirely cleared from the fields, and there may be very little hay shipped in by the railroads for the reason that the warehouses will have to be broken to obtain the hay, and further, it is found that the railroad situation is becoming a little stringent and cars are obtained for hay shipments with some difficulty. It would appear that a firmer feeling generally may be expected, and that prices on all varieties of good horse hay may be advanced.

There is a great deal of alfalfa offering from lands in the irrigated sections, and this alfalfa is not acceptable in our markets at this time of the season when we are receiving a better class of hay from the river.

Very little choice straw has been arriving and the market is decidedly firm.

Fancy wheat hay	19.00@20.00
No. 1 wheat or wheat & oat	16.50@17.50
No. 2 wheat or wheat & Oat	13.00@14.00
Choice tame	15.00@16.00
Other tame oat	10.00@13.00
Wild oats	10.00@12.50
Stock hay	5.50@6.00
Alfalfa	9.00@11.00
Straw, bale	60@70

Grain.

Wheat	1.45@1.47½
Barley, fancy	1.71¼@1.72½
Barley, good to choice	1.67½@1.70
Barley, poor to fair	1.57½@1.65
Corn	1.60@1.63
Oats, red	1.70@1.75
Rye	1.47½@1.52½
Mustard, brown	5½
Alfalfa seed	18
Millet	3@3½
Flaxseed	5@5½
Broom corn seed, ton	30.00

Feed Stuff

Alfalfa meal	16.00@17.00
Bran, ton	28.00@29.00
Feed cornmeal, ton	38.00@39.00
Cracked corn	38.00@39.00
Rolled barley, ton	34.50@36.00
Rolled oats, ton	31.00@32.00
Middlings	32.00@34.00
Oilcake meal	42.00@43.50
Cocoanut cake, ton	24.00@25.00
Mixed feed, ton	25.00@27.00
Shorts	29.00@30.00

Deciduous Fruit Market

SACRAMENTO, Cal., Oct. 7, 1911.

F. B. McKevitt, general maanger of the California Fruit Distributors, reports:

The following gives the number of cars of deciduous fruit shipped from all points in California for the week (7 days) ending Friday morning, October 6th, 1911:

Peaches—38 cars. The report for this week includes several cars of peaches that should have been reported heretofore. Owing to the failure of the car line to report this shipment at the proper time, the actual movement this week has been swelled by about eight cars. Salways are now nearly done. Another week will probably entirely finish them.

Plums—A few scattering shipments are still going forward. Belated reports received at this office would indicate the shipment for the week of ten cars, but as this is a mistake, and there are practically no plums now moving, this report will not appear as indicating the movement for the week.

Pears—91 cars. Contrary to expectations, the movement of fall and winter pears has been greater this week than last. The fruit continues to be of splendid quality. Shipment is now nearing its end, and will last but a few days longer.

Grapes—633¼ cars. Although this report indicates the foregoing as the movement for the week, it has been swelled by cars which should have been reported to us last week. The actual movement for the week was about 560 cars, consisting almost entirely of Tokays. There are a few Cornichons moving, but practically no Emperors. Some Malagas continue to go forward from the Fresno district, and will continue in limited supply for the next ten days or two weeks. Shipments of Tokays from Lodi remain about stationary, while an increase is noted from the American River district.

Our first considerable storm for the season appeared on the first of the month. Showers fell in several places, and in one or two sections grapes were injured in spots. It has been estimated that the shipment would be affected for this reason by about one thousand carloads. Many of the principal districts entirely escaped. At the present time the weather is everything that could be desired. Indications are favorable for its continuance.

Comparative statement of shipments for season up to September 30, 1911:

	1910.	1911.
Cherries	250½	216¼
Apricots	289¾	214½
Peaches	2,517¾	1,970¾
Plums	1,552½	1,357½
Pears	2,330	2,137¼
Grapes	3,186½	3,038
Sundry	12	6¼
Total	10,139	8,940½

Citrus Fruit Market

LOS ANGELES, Oct. 11, 1911.

Between 350 and 400 cars of Valencias shipped during the month of October will practically clean up the old crop. Just at present the market is exceptionally strong, caused by the dearth of fruit in the market which will be overcome within a few days by extra shipments

Did You See Our Big Auction Ad?

Look on Page 358

Briggs & Weber

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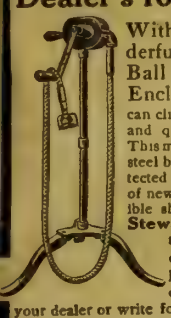

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See Big Auction Ad on Page 358

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"Buy the Best Milk Producer in the world, sugar beet pulp at 50 cents per ton, of Los Alamitos Sugar factory."

Diligence is the mother of good luck.
—Franklin.

and for some extra fancy stock a premium is being offered. The estimates of next year's crop are that it will be fully as large as the present one, and, so far as can be judged this early, quality will be excellent. The season has been very favorable.

Lemons are also strong and the few now in the market are picked up at top prices. Of course a few extra cars would overdo matters and prices would not remain as strong as at present, but there is no indication of any such shipments, and it is probable the next few weeks will see the maintenance of present firm conditions and good prices.

Shipments.

Shipments of oranges to date since November 1, 1910, 36,400, lemons 6,525, total 42,925. To same date last season: Oranges, 24,979, lemons 4,620, total 29,599.

NEW YORK, Oct. 9.—Nine Valencias and one lemon sold. Market firm on Valencias and higher on lemons. Weather fair.

VALENCIAS—	Avge.
Tustin Gem, fy, Tustin P Co	$4.35
Old Oak, ch, Tustin P Co	3.80
Golden Cross, O K Ex, Upland	4.95
Red X, O K Ex, Upland	4.05
Carmencita, S T Ex, Placentia	5.20
Columbo, S T Ex, Placentia	4.60
Nonpareil, Cov Ex, Covina	3.70
Teal, Cov Ex, Covina	3.30
Titus Ranch, fy, S Marino G	4.40
El Toreador, sd, S Marino G	3.45
Mayflower, fy, Stewart F Co	5.60
Pilgrim, fy, Stewart F Co	4.80
Buena, sd, Stewart F Co	4.30
Old Mission, fy, Chapman	6.50
Old Mission, ch, Chapman	5.45
Golden Eagle, sd, Chapman	4.65
Old Mission, fy, Chapman	6.40
Old Mission, ch, Chapman	5.50
Golden Eagle, sd, Chapman	4.70
Lady Rowena, Chapman	4.25
Corona	4.45
Corona, Standards	3.80
HALF BOXES—	
Golden Cross	2.65
LEMONS—	
Excellent	5.85

BOSTON, Oct. 9.—Five cars sold. Market active. Weather favorable.

VALENCIAS—	Avge.
Alta Cresta, A H Ex, Pachappa	$5.40
Hobo, A H Ex, Pachappa	3.80
Robusta, A H Ex, Pachappa	4.70
LEMONS—	
Southland Beauty, Q C, Corona	5.90
Justrite, Q C Ex, Corona	4.80
VALENCIAS—	
Orchard, or, National O C	4.55
Standard, sd, National O C	4.00

PHILADELPHIA, Oct. 9.—Two cars Valencias, one lemon sold.

VALENCIAS—	Avge.
Stag, A C G Ex, Glendora	$5.00
Hunter, A C G Ex, Glendora	2.85
Columbo, S T Ex, Placentia	4.40
Pointer, A C G, Glendora	3.95
Carmencita, S T, Placentia	4.75
LEMONS—	
Loma, V C Ex, Limoneira	4.60

PITTSBURG, Oct. 9.—Two cars sold. Market active on oranges. Weather cool.

VALENCIAS—	Avge.
Naralimo, or, Sparr Fruit Co	$5.10
Quail, O K Ex, Ontario	4.15
Circus, xc, Sparr Fruit Co	4.65
Coyote, O K, Ontario	3.40

CLEVELAND, Oct. 9.—One car Valencias sold. Market advancing. Weather cool.

VALENCIAS—	Avge.
Quail, A C G Ex, Lamanda Park	$4.80

ST. LOUIS, Oct. 9.—Three cars sold. Weather cool and cloudy. Market steady.

VALENCIAS—	Avge.
Stag, A C G Ex, Charter Oak	$4.95
Hunter, A C G Ex, Charter Oak	3.45
Red Ridinghood, Char. Oak (halves)	1.50
Planet, S S Ex, McPherson	3.85
S S, S S Ex, McPherson	3.45
Pointer, A C G Ex, Charter Oak	3.70
Stag, A C G, Charter Oak (halves)	2.15
Hunter A C G, Charter Oak (halves)	1.35
Searchlight, S S, McPherson	4.10
LEMONS—	
Searchlight, S S Ex, Orange	$3.90
Searchlight, S S Ex, McPherson	3.65
S S, S S Ex, Orange	3.05
S S, S S Ex, McPherson	3.05

OULD DOCTOR MA'GINN.

The ould doctor had only one failin,'
It stayed with him, faith, till he died;
And that was the habit av wearin'
His darby a thrifle wan side!

And twenty times daily 'twas straightened,
And try as he would for a year,
Not thinkin', he'd give it a teecher
A thrifle down over wan ear!

It sat him lop-sided and aisy;
It throubled his kith and his kin—
But ach, 'twas the only thing crooked
About our ould Doctor Ma'Ginn!

And now that he's gone to his Glory—
Excuse me a bit av a tear—
Here's twenty to wan that his halo
Is 'slantin' down over his ear!
—Arthur Springer, in Smart Set.

Did you ever meet a maiden fair
Who blessed you with a smile,
Then when you tried to favor her
She backed away a mile?
—Chas. H. Meiers.

Whoever needs a helping hand that I can give is my neighbor.

A GREAT ORGANIZATION.

(Continued from Page 339.)

"Fewer serious efforts are made now to break down the co-operative principle among the growers. New schemes of fruit marketing are proposed from time to time, the organizations are frequently attacked in the courts under one guise or another, and other insidious movements are started, all having in view the possible splitting open of the co-operative organizations and a return to the methods of marketing which would destroy the systematic distribution and marketing now in operation and reinstate the chaotic speculative methods that were formerly in vogue. The co-operative movement in the citrus industry is the result of a slow, painful evolution, and the grower does not appear to be deceived by these efforts, no matter how ingeniously and artfully they are conceived."

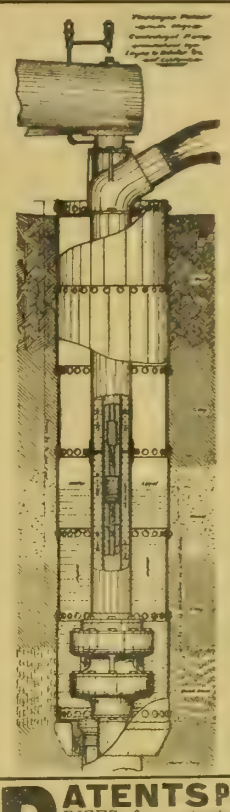
LEMON INCREASE.

In the report of Commissioner Beers of Santa Barbara County we note:

"New interest is being awakened in the lemon industry by the coming of outside fruit men who purchase interests now developed and make arrangements for enlarging the present acreage. Lands suitable for this purpose are being secured and arrangements are already made for more extensive planting in the early spring and summer. Considering the prices that have been obtained during the past two or more years, this line of development offers many attractions. The prospects are good for a much extended industry."

A POSTPONEMENT.

Southern California has two big attractions on Saturday of this week—President Taft and the Santa Monica Road Race. Of course everybody wants to see the far-famed smile; equally, of course, motor enthusiasts count on witnessing the road race which is one of the most exciting events of the local year. All signs point to Saturday as a busy day, so another big attraction to the prosperous rancher has been held over for one week. This is the sale of farm machinery, animals and equipment used during the past year in development work on the great Van Nuys and Lankershim ranches, northwest of Los Angeles. Messrs. Briggs and Weber of Los Angeles inform us that President Taft wired that if they held that sale on the day he is in Southern California he would have no audience, so they've called it off as a favor to the President. But on the next Saturday, Oct. 21, at nine o'clock, the entire outfit, horses, mules, and machinery, will be turned over to buyers at Van Nuys. All stock and equipment will be on view to prospective purchasers before the sale day, as may be seen, together with further particulars of this and other events of prime interest to dairymen and farmers, on announcement page of Messrs. Briggs and Weber in this issue of the Cultivator.



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Soda Crackers	8c lb.
Solid Pack Western Corn	95c doz.
Standard Quart Size Tomatoes	$1.70 case (2 doz.)
Sunlight Blend Coffee, equal to any 35c grade	5-lb. tins, $1.30
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Gold Dust, large package	$2.10 doz.
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Queen Anne Flour	$5.40 barrel (Highest quality obtainable.)
Ex. Quality Quart Size Tomatoes	$1.85 case (2 doz.)
Marrowfat Peas	$2.20 case (2 doz.)
"Zar" Pure Cream of Tartar Baking Powder	5-lb. can, $1.00 each
Spaghetti, 25-lb. cartons	$1.25 each; 5-lb. cartons, 33c each
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Spiced Sweet Pickles	Gal. kit, 97c
Peerless Mincemeat	10c size, doz. 90c
Van Camp's Soups	doz. 95c
Ripe Olives, quarts	doz. $2.25
Long Shred Cocoanut	1-lb. pkg. 19c
Elastic Starch	doz. 75c
Celluloid Starch	doz. 75c
Armour's Chipped Beef	½-lb. tins, doz. $1.40
Faultless Toilet Paper	doz. rolls, 55c
Flour, Alta Mills Best Patent	50 lbs., $1.35
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AUCTIONS

150-Horses and Mules-150

$15,000 Worth of Farm Machinery

On account of the arrival of President Taft and the Santa Monica road race on the 14th, the sale is postponed to

Saturday, Oct. 21, 1911, Promptly at 9 A. M., Rain or Shine at Van Nuys, Cal.

18 wagons, 15 plows, 75 sets of double harness, 10 mowers, 12 harrows, 5 rakes, 1 combined harvester, 1 stationary thrashing outfit, a gasoline engine, barley crusher, corn planters and drills, binders, several complete blacksmith outfits, 3 leaders, 7 cultivators, 2 fanning mills, 3 scales, trip hammer and engine complete, 1 circular saw and frame, force pumps and hose, 5 carts, hay stackers, hay bucks and miscellaneous farm tools and machinery. **Without Reserve.**

This is the PICK and CHOICE of the immense equipment of the Van Nuys and Lankershim ranches reserved from auction of last year for development work which is now to be done by contract.

Horses and mules are all young, well broken, weighing from 1000 to 1500 pounds each.

Terms: ¼ cash, balance 6 months on approved note. 5% discount for all cash. All sales of $100 or less to be all cash.

Free Lunch

Gasoline motor car leaves Arcade Depot, foot of Fifth St. and Central Ave., at 7:00 A. M. and 1:00 P. M. Get off at Van Nuys. Stock and equipment ¼ mile south of depot at Whitley Ranch. All intending purchasers are invited to inspect stock and machinery before sales dates and before purchasing.

For further particulars see E. Morris, Whitley Ranch, Van Nuys.

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---

95 Dairy Cows and Heifers 13 Horses and Colts 1 Holstein Bull

Stanchions for 70 Cows, Sheds and Outbuildings, One 2-H. P. Engine, Etc., on

Friday, Oct. 20, at 10 A.M., Rain or Shine

On the Ranch, corner of **Western & Slauson Aves., Los Angeles**

Ranch has been sold and owner is leaving the country. No reserve.

TERMS: 6 months time on approved note. 5% discount for cash.

FREE LUNCH.

Take Moneta Ave. car or West 54th St. cars and get off at Denker Ave., walk one block west and two south.

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12 Ranch Horses—heavy and light draft.

50 tons Barley Hay—baled. 2 platform Ranch Wagons, Milk Cooler, Cans, etc.

TERMS: One-fourth cash—balance 6 months on approved note. 5% discount for all cash. All sums under $50.00 cash.

These cows are all Dairy Cows in fine condition. Owner invites inspection before sale.

No limit or reserve. Owner leaving country.

Take Santa Ana Electric cars—get off Martha's Vineyard. Teams will meet all cars. Cars leave P. E. Depot, 6th and Main, Los Angeles, 7:10, 8:05, 9:00, 9:50.

No outside Stock. Free lunch.

For further particulars, see

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Wednesday, Nov. 1, at 10 A.M., Prompt, Rain or Shine

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The owner invites inspection before sale.

TERMS: One-fourth Cash; balance six months time on approved note. 5% discount for cash.

PLACE: Take 54th Street cars—get off at Budlong Ave.—walk south to Slauson—or take Interurban San Pedro line to Slauson—walk west to Budlong.

(No outside stock sold at this sale.)

HENRY FRANKE, Owner. South 4763. **Briggs & Weber, Auctioneers**

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LOS ANGELES OCTOBER 19, 1911 SAN FRANCISCO

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California Cultivator

Vol. XXXVII. No. 16. LOS ANGELES: THURSDAY, OCTOBER 19, 1911 One Dollar the Year

The State Apple Show at Watsonville

A Successful Showing of California's Apples at the Second Exposition of the Watsonville Apple Annual Association. The Pajaro Valley Does Itself Proud.

"The greatest apple growing center in the world" has settled back to normal. The "Boosters of Boosterville" are drawing in a long breath while they rest their feet on the window sill and say, "By George, I'm tired, but it was the greatest on earth, and we done it!" Sure it was a great show, which has won the praise of the state, and even of some most worthy people of other states.

I refer to the Apple Annual, or the California Apple Show, held at Watsonville, in the Pajaro Valley, in Santa Cruz County, October 9-14, 1911.

But about that "biggest on earth" claim; let us analyze a bit. I recently heard an enthusiastic real estate agent lauding lands under a great irrigating system, and he remarked: "This is the greatest irrigating system in the world." And yet there is one other in this state which covers more than three times the acreage, and other states go us still better. We have become so used to brag of our biggest and tallest trees, the biggest pumpkins, the greatest and best citrus production, raisin production, wine production, all kinds of fruit production, we even admit the ownership of the greater part of the greatest ocean. We boast of all this—which is true,—I say, till anything which isn't the biggest yet is mighty small potatoes, or apples, as the case may be.

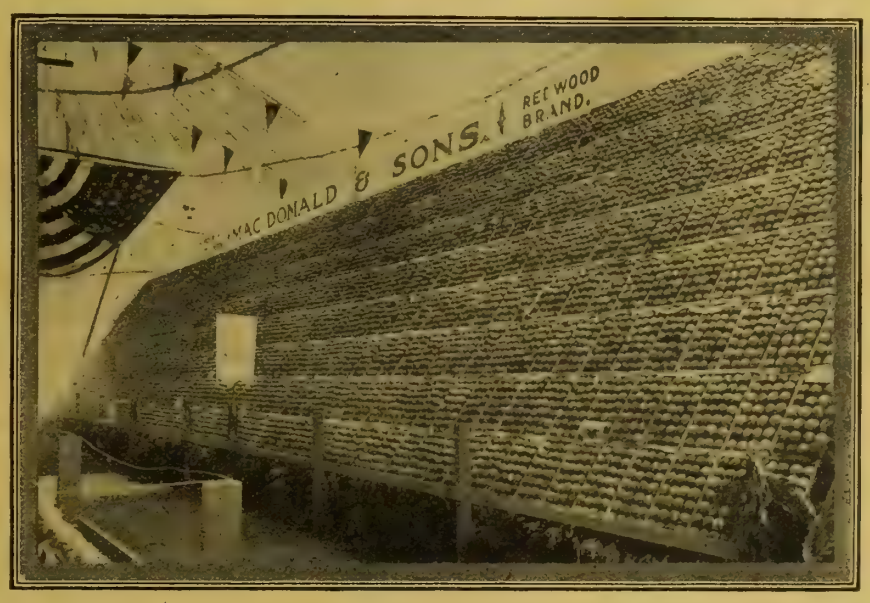
But about this apple show; let us consider a moment. It did not have on exhibition as many apples as did its predecessor on the same spot a year ago. Then there were twenty-six cars of fruit exhibited, and this year the total was much less, at least not over twenty-two or twenty-four. The full car entries were ten, as against fifteen last year. The one hundred and fifty box entries were also less.

But outside of quantity, mere bulk, it was a better, a greater show than its predecessor. The fruit was more carefully selected, it was better packed and better arranged. The industrial exhibit was far better arranged, the "Lane" had more shows and fakes, and, incidentally (and of interest to the management), on the whole it was financially most successful.

As to other exclusively apple shows, the Gravenstein at Sebastopol, the National at Spokane, the "International" at Denver, were all big and fine, but declared by many who attended them not the equal in all respects of this one. The Gravenstein show was a wonderful show and worthy all the praise given to it, but in the matter of quantity it probably had less than half the apples displayed here. Besides, it was not so exclusively an apple show. There were Burbank's and other most interesting exhibits, some of general dried fruits. Here at Watsonville I noted the exclusiveness of the show, and remarked to a resident: "It is exclusively apples; not even a pear is on exhibition." "Oh, yes, there is," he said, and proceeded to show me, on the sands in front of the apple-constructed miniature of the Santa Cruz Casino, wax dummies of a "pair" of spoonies under a beach umbrella.

As to the Valley being an apple producing center, there is no other place in the world where the apple is produced where it is so specialized as here. I make this statement arbitrarily, and perhaps cannot produce the proof, but will ask any challenger to produce his proof to the contrary. Some may ask as to Hood River. If Hood River should add to its output all the rest of Oregon's output, and to that all the shipments of the state of Washington, the two states would still lack many cars of coming up to the little Pajaro Valley's total output. Of course, Hood River has produced some remarkably fine apples, a remarkably fine pack, and good advertising, but not the quantity of apples. Besides the apple shipments, which utilize the energies of ninety-six packing concerns, there are three vinegar and cider factories, eighteen evaporators and a cannery.

California needs a few more shows like that at Sebastopol and this one to convince Californians that their own state is on the apple map.



A Car Lot Exhibit.

About the Show.

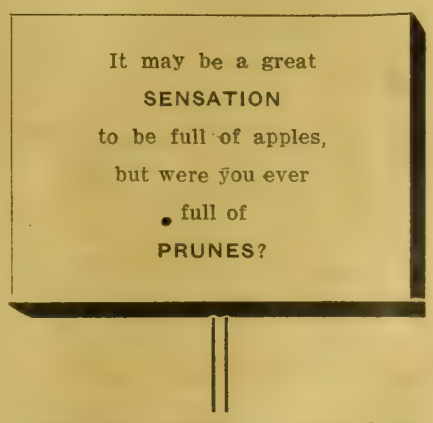
The week began with a drizzling rain. There was no blue in the sky, but more than enough to make up in the dispositions of the directors. By Monday afternoon the sun and the directors smiled. Tuesday the weather was perfect, Wednesday more so, Thursday most perfect, and to the superlative was added each day, till by Saturday even California in her sunniest mood could have done no better.

And the crowds came and saw, and carried away souvenir canes and things, and bought cider, apple pie, popcorn crisps, taffy and tickets to the Lane, where they were in turn sold, and seemed to enjoy even the latter.

What They Saw.

The exhibits not only filled the pavilion, but two immense tents, one for car exhibits and the other for the orchard implement and industrial section. The center of the pavilion was given over to the feature exhibits. A feature exhibit is one put up by a firm, association, community or county, in which ingenuity, artistic taste, and in this case apples, combine to produce striking effect. The fruit may be inferior, but the feature must have attractiveness, and a surprise if possible. Dried apples combined with fresh fruit in producing the remarkable results, an idea of which may be had from engravings shown on these pages.

As one entered, the first feature was the Panama Canal done in dried apples by students of Watsonville High School. It was about 10x35 feet. The mountains and plains were of dried apples, the marsh lands of green Newtowns, and the Chagres River and the Canal of real water of the Pajaro. The Stewart Fruit Company flung to the breeze a banner with the device, "Pajaro Valley Apples the World Over," but only showed a hemisphere covered with them. The San Monte went them a half better, and showed the whole globe, the continents of fresh whole apples and the seas of overlapping evaporated apples. The globe revolved constantly, while an electrically operated tapper working about as fast as a watch ticks, a gong striking every ten or fifteen seconds, and a chime operating every hour or so, announced the consumption of an apple, a box or a car of Pajaro Valley apples "the year around, the world around." Hard by was the San Jose electric light tower in miniature, though not so miniature either, for it towered up to the roof, and was covered with apples to show that the Santa Clara Valley is some on apples as well as prunes. She couldn't get away from her prunes entirely, though, for I noted on one of her banners in the Wednesday parade:



That was carried by one of Mr. Brooks' boosters of the "greatest chamber of commerce on earth."

Five buildings were done in apples, all remarkably well done. They were the Casino at Santa Cruz, the Watsonville Y. M. C. A. building, the old 'dobe customs house of Monterey, the Appleton Hotel, now building at Watsonville, and the Salinas sugar factory. Another building well done, but not a facsimile of any other, was a cottage surrounded by a model farm in 1923. The spraying was by aeroplane (Ortho sprays, of course), and other farming transactions on a similar high plane. An apple tree several years old and heavily loaded with fruit was taken up root and branch and transplanted to the show, and attracted much attention, as did the "latest from Paris," a lady's hat of dried apples, fresh apples and leaves. Being so reduced in size, only four feet in diameter, it was hardly recognized as a modern hat.

The Fruit.

The ten full car exhibits were beauties. Two cars were arranged on one form like a mammoth letter A. Up each side of the A the boxes were tiered end to end, eight high, and seventy-two boxes in each rank. Some were "straight" cars, all one variety, others mixed varieties.

The one variety car was by far the most attractive. The fruit was surfaced beautifully, most of this showing magnificent pack, and one judge told me the fruit graded very well through the pack. In judging, ten boxes were dumped, and each fruit of the ten boxes examined carefully. Every scale and every worm found in these ten boxes, as well as every defective fruit, causes heavy cuts in the score.

The plate exhibits were instructive in that they comprised scores of varieties, and on each was a card with name of variety.

County Exhibits.

Exhibits from other counties or sections were not large, but sufficient to prove that the Pajaro Valley may well watch out or it will not be the only apple on the limb. There are others coming. Even far away Modoc staged out enough of her apples to make a fine little showing. Near by was her neighbor, Butte, with some magnificent King Davids, Delicious, Winter Bananas, Black Twigs and a dozen others, mostly of the deep red varieties. Tuolumne? Yes, Tuolumne was there with a great quantity of King Davids and many other varieties. For spectacular appearance those mountain apples are stunners. As to eating, the best "York State" apple isn't in the running—they taste like more. Pass the King Davids again, please.

Southern California came up from San Bernardino County, Yucaipe, or rather Oak Glenn, near Redlands. This exhibit was between those of Tuolumne and Butte, and all three exhibits held a crowd constantly. Every apple richly colored and a beauty. The Paso Robles section exhibited a dozen varieties, all presenting a fine appearance. Humboldt makes its maiden effort in a good sized exhibit. The fruit is rather large, but shows quality. Humboldt is not a very far away neighbor of Sonoma. Both are old apple producers, and both are beginning to realize their strength along that line.

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LOS ANGELES

Citrus and Tropical Fruits

HAIRY VETCH.

By M. L. Fisher, Purdue University Ag. Ex. Sta.

Within the past year or two there have been printed in farm papers a number of articles testifying to the value of vetch as a green manuring plant. These results seem to be well corroborated. The Purdue University Agricultural Experiment Station has been growing vetch for several years, and since many inquiries have been made concerning vetch, this brief statement is made concerning the plant.

Hairy vetch is a legume belonging to the same family of plants as the clovers, soy beans and cow peas. It is also known by the names of winter vetch and sand vetch. The plant has beautiful purple blossoms gathered in a cluster, compound leaves with six or eight leaflets, and weak stems. The roots are fibrous and rather coarse. The plant has a tendency to grow throughout the summer, having ripe seed and blossoms on the stem at the same time. The plant seems to be adapted to all types of soil, preferably the clay loam, well drained.

Land for vetch should be plowed and prepared the same as for sowing wheat. Thorough disking may also make a good seed bed, depending upon conditions. Vetch may also be sown in standing corn. The sowing is best done with a drill, sowing from forty to sixty pounds of seed per acre. The month of August is preferable for sowing, although early September sowing may also be satisfactory. After sowing, the crop will need no further attention. The plant starts growing early in the spring and makes rapid growth, and is ready to pasture or turn under by the middle of April, at which time the growth should be as much as twelve to eighteen inches in length.

Hairy vetch is probably better for green manuring than for any other purpose, although some farmers have had good results from pasturing it with hogs and cattle. However, some farmers have found that their animals do not relish the plant as a pasture. If rye is sown with the vetch it tends to hold the vetch up, and the crop may be cut for green feed at about the time the rye is beginning to head. It makes very good feed for dairy cattle.

In 1910 the Station obtained from a mixture of rye and vetch, green weight of six tons per acre, equivalent to about two and three-fourths tons of dry hay. In 1911 the yield was eight and one-fourth tons of green weight, equivalent to about three and one-half tons of cured hay. Vetch sowed alone this year made a green weight of nine and three-fourths tons per acre.

The vetch plant, like other legumes, has an abundance of nodules on its roots when the ground is well inoculated. In some cases the plant produces nodules the first time sown. In other cases the nodules do not appear and inoculation seems to be necessary. It seems wise to sow a small area for one or two years until inoculation is obtained, and then use this soil to inoculate larger areas. The plant is so little grown that inoculated soil is not easily obtained, and in most cases it is probably not needed.

The Experiment Station in its work has noted two things concerning hairy vetch which seem to be against it. One is that it has a tendency to winter kill, some winters killing badly, other winters not very much. There is also a tendency for the plant to escape from cultivation and become a weed. As a weed it will do no harm except as it may appear in wheat fields, where it will grow and mature with the wheat, and the seed being threshed cannot be easily separated from the wheat.

The Experiment Station believes that the crop merits further consideration by the farmers in the state, and suggests that the beginner operate on a small scale until he is convinced that it is something that he wants.

ORANGES IN OTHER COUNTRIES.

By G. Harold Powell, in Circular No. 4, Citrus Protective League.

A citrus fruit grower from the Transvaal has recently been in California studying the methods of handling the California citrus fruit crop, and to secure appliances to be used in the handling of the crop in the Transvaal. They are beginning to ship oranges from the Transvaal to the United Kingdom in considerable quantities during the summer months, the season when the fruit ripens in that country. The haul by rail to the South African coast, usually to Cape Town, may reach a distance of 1,000 miles. According to data furnished by the grower mentioned, the fruit is being carried by the railroads during the present season to the point of export at the rate of 15 shillings per ton (13.1 cents per box of California size); it costs 5 shillings per ton (4.4 cents per box) for dock dues and loading charges, and 25 shillings per ton (22 cents per box) to Southampton, a distance of 6,000 miles, making a total cost of transportation of 39.5 cents per box of California size for a distance that may equal 7,000 miles. The fruit is carried the entire distance without refrigeration. With a rate of 25 to 30 cents a box from Southampton to New York, which is the usual rate on foreign citrus fruits, the South African grower, 10,000 miles distant, can land oranges in the Eastern United States at a lower cost of transportation than the grower in California.

Oranges in Mexico.

There is considerable activity in citrus fruit planting in Mexico. According to the Daily Trade and Consular Reports, Sept. 7, 1911, "the shipment of oranges from San Luis Potosi, Mexico, to Chicago will commence about Sept. 20, 1911, and it is now estimated that a total of about 55 cars will cover the season's exports, as compared with 34 cars last year. These oranges all come from the Rio Verde Valley, in the south central part of the state. The freight from Rio Verde to Chicago is $1.25 gold per 100 pounds, and customs duty $1 gold per 100 pounds (which total $1.91 per 85 pound box), but they reach the American markets so early in the season that good prices are obtained."

Oranges in Spain, Italy and Other Countries.

The exports of oranges from Spain in 1910 amounted to 1,051,764,067 pounds; from Italy, 265,498,285 pounds, an equivalent from both countries of more than 55,000 carloads of California oranges.

More than 50 per cent of the Spanish oranges are shipped to the United Kingdom, and from 15 to 20 per cent go both to France and to Germany. The exports of oranges from Spain have increased 67.2 per cent in the last ten years. The freight rate on Spanish oranges to the United States is about 30 cents per box. It may be as low as one shilling (24 cents) per case, equal to 2½ California boxes, to the United Kingdom. The oranges from Italy are exported principally to Austria-Hungary, Germany, Russia and the United Kingdom in order of importance. The exports of oranges from Italy have increased 59.4 per cent in the last ten years.

The exports of oranges from Jaffa in 1910 amounted to 900,000 cases, valued at $1,136,794. Most of these oranges are shipped to the United Kingdom, with smaller quantities to Russia and Egypt. The exports from Jaffa have increased 149 per cent in the last ten years.

The exports of mandarin oranges from Japan in 1909 amounted to 22,245,897 pounds. The oranges from Japan are shipped principally to Asiatic Russia, Corea, Kwantung Province and British America, in order of importance. More than half a million pounds were shipped from Japan to the United States in 1909. The exports of mandarin oranges from Japan have increased 605 per cent in the last ten years.

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Read the letters in our free book to prove it. No machine ever invented that equals this 20th Century Grader on all work of grading and leveling roads, building ditches, levees, borders, irrigation laterals, leveling land, cutting sage brush and weeds, scalping alfalfa, cleaning streets and sidewalks and its many other uses.

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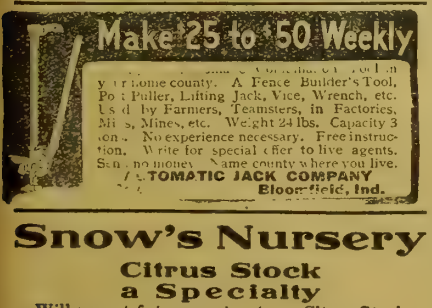
Chicago, Ill.



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Standard Staples and Standard Tools

The one post for all purposes

Catalogue —11—

American Steel Post Co.
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The Faultless Casoline Engine
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Nothing Better on Earth
Write for Catalog and Prices
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Why not buy the best? 2 year old sweet stock all first class, clean, and well rooted. 25,000 one-year Sour Seed Bed Stock 8 in. and up.

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Snow's Nursery
Citrus Stock a Specialty
Will accept future contracts on Citrus Stock; also Apricots
H. K. Snow, Jr., Prop. Oxnard, Cal.

Unless a man amounts to a good deal, he should not say he has done his best.—E. W. Howe.

Every orange producing country in the world is interested in the effort of the importers of lemons in New York and the exporters in Sicily to have the duty removed from citrus fruits. We may expect that each of these countries, which pays a low wage to labor and a low rate of transportation, will prepare to ship its citrus fruits to the United States if a low rate of duty should be established.

Lemons in Europe and Prices in New York.

There has been an unusual demand for lemons in European countries during the year 1911. This demand has been increasing steadily for ten years, and in 1911 it has had a marked effect on the international shipment of lemons.

The California crop in 1910-11 is the largest in the history of the state. Nearly twice as much fruit has been shipped into Eastern markets as in 1909-10, and the large increase over the crop of the preceding year has reduced the price of lemons to an unusually low level. Heretofore, the Eastern markets have been controlled by the importers of Italian lemons, and each year since 1885 the wholesale price has been forced at some period during the summer months from $6 to $12.50 per box. On account of the increase in the California crop in 1911, and the freer shipment of the fruit to Eastern markets, the wholesale price of 132,738 boxes of Italian lemons in New York in August, 1911, averaged about $2.60 per box, an average of less than 10 cents per dozen. The average wholesale price of 143,986 boxes of Italian lemons in New York in August in 1910, when the California crop was much lighter, was $3.67 per box.

In an effort to hold the prices high the importers have endeavored to create a scarcity in the Eastern supply of lemons. They have been reshipping lemons to Europe since the first of August and have withdrawn the fruit from the auction sales in New York whenever the price has been unusually low. Mr. Sciortino, a prominent New York lemon importer, is quoted as saying that some of the exporters in Sicily would probably not permit the sale of lemons in New York at a price below $4 a box wholesale on account of the higher prices in Germany and England, where, in referring to Germany, Mr. Sciortino states that "buyers there are willing to pay relatively higher prices than can be obtained in the American markets."

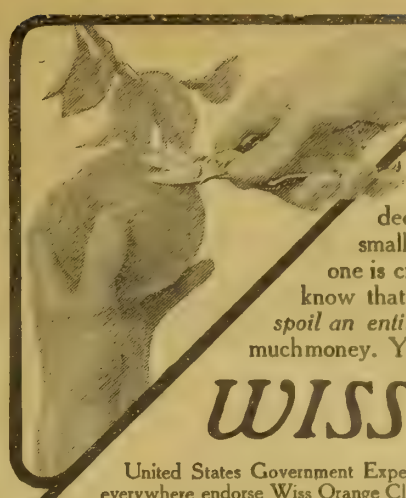
Equivalent Rates of Duty.

There is a duty equivalent to 1 cent per pound on citrus fruits in Australia; 1.84 cents maximum and a free conventional duty on lemons, and 2.2 cents on oranges in Austria-Hungary; 79-100 of a cent on oranges and lemons in Belgium; 79-100 of a cent in Denmark; 1¾ cents in Finland; 1.3 cents maximum and 44-100 of a cent minimum in France; 1.3 cents maximum on oranges and lemons, 35-100 of a cent minimum on oranges and a free conventional duty on lemons in Germany; 2.43 cents maximum and 24-100 of a cent minimum in Norway; 44-100 of a cent maximum and 44-1000 minimum in Roumania; 2.25 cents maximum and 1.42 minimum in Russia; and 1.21 cents in Sweden. There is no duty on citrus fruits in Argentine, Canada, England or Switzerland. With the exception of Australia, which produces citrus fruits, these duties are levied for revenue only. Mexico formerly granted a bounty of 85 cents per 1,000 lemons and $1 per thousand on oranges exported to encourage the planting of these fruits; and Italy fixes a minimum price to be paid the producer for citrate of lime, into which 40 per cent of the Italian lemon crop is converted, and fixes a minimum selling price as well.

IN THE DEPARTMENT STORE.

Said a New York shopper: "He wanted a copy of 'Tales From Shakespeare,' by Charles and Mary Lamb. As he was in a great hurry, he cut the title down and asked the clerk at the book counter of one of the large department stores whether she had 'Lambs' Tales.' He said he would never forget the far away look she gave him as she remarked, in a most superior tone:

"'Lambs' tails? Fur department—third floor.'"



Stop *Bruising* Fruit and *Losing* Money.

Every time your clippers pierce an orange's skin you open the way to decay. Usually the cut is too small to *notice*—and the bruised one is crated with the good. *You* know that *one decaying orange may spoil an entire crate*—you lose just that much money. You *won't* bruise fruit if you use

WISS ORANGE CLIPPERS

United States Government Experts and leading citrus growers everywhere endorse Wiss Orange Clippers because they *know by experience* Wiss Clippers *last longest, do best work* and *save money* by *minimizing* the liability of bruising the fruit.

The blades are specially curved and ground—the points and outer edges are smoothened and rounded to avoid bruising. Handles are shaped to prevent tiring of the hand. Wiss Orange Clippers will give years of service—and are unrestrictedly guaranteed to give satisfaction. *For sale by all dealers.*

Wiss Solid Steel *Pruning Shears* will snip a broom handle and cut the most delicate tendrils. All parts are interchangeable and any broken parts can be readily replaced. 9-inch size, $2.25.

J. WISS & SONS CO., 15-33 Littleton Avenue, Newark, N. J.

Good Citrus Trees

Expert grown clean stock, up to size now, for immediate or next season delivery. Nothing better anywhere. Buds selected with greatest care, and positively guaranteed true to name.

250,000 Seed Bed Stock

Sour, Sweet or Pomelo—the McMillan grown kind—large clean plants from selected seed—the kind it pays to plant. Inspection and correspondence invited.

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This Pump Will Interest the Irrigator

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Our trees always prove true. Send for Catalog.
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Orange and Lemon Trees
Fifty Thousand High Grade Trees
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MEXICO FOR YOU

Choice of Best Bottom Lands $25 per Acre
Good Land, Better Than You Are Probably Used To At $10 per Acre

There are more and better opportunities in the **STATE OF SINALOA, MEXICO,** than you ever knew in your life. The land is better, more level and richer.

The **RAINFALL** is greater, the streams larger, the **SUB-WATER** shallower.

You can raise a bigger and a better crop of beans, corn, potatoes, Bermuda onions, alfalfa, cotton, tomatoes, oranges or lemons, and you can raise tropical fruits.

MARKETS at good prices for everything.

TRANSPORTATION by rail and water.

CLIMATE comparable only to that of Southern California.

We want you to have our State of Sinaloa Booklet, which tells all about this wonderful state. Send us your name and address.

Excursion parties twice a month.

Ben W. McCloskey & Co.

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There is money in

SUGAR and CATTLE

Share in the profits of an agricultural investment, comprising over 21 square miles of rich agricultural lands.

The land has an abundance of water in a district where irrigation, drought and frosts are unknown. Large tame grass pastures have just been prepared.

The land is free from incumbrances, which affords our investors the highest degree of security.

THE PRODUCTS OF THE RANCH ARE CATTLE AND CANE SUGAR, TWO OF THE WORLD'S BIGGEST DIVIDEND PAYERS, AND ON WHICH THE MARKET IS STEADILY ADVANCING.

In this district lean cattle fatten in four months in tame grass pastures and increase 50% to 100% in value.

Cane sugar is manufactured at one-third the cost of beet sugar.

Additional capital is required for improvements and to buy cattle to stock the ranch. A limited amount of investment certificates will be issued in units of $100 cash or on installments. Six per cent per annum interest is guaranteed, and we also share the profits with you. Option given to withdraw your money and profits or to become a part owner of this great property.

Applications for certificates will be filed in the order received. This enterprise is backed by some of the most substantial and well-known business men of Los Angeles. We invite the strictest investigation.

Send for free booklets and descriptive literature.

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710 Grosse Building Los Angeles, Cal.

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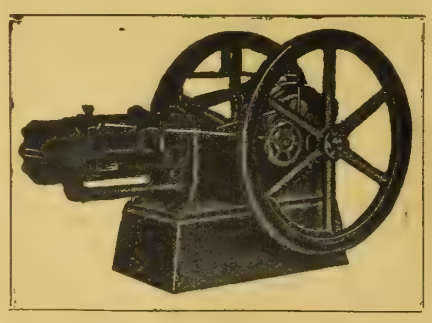

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SEED GRAIN BLACK AND RED OATS, WHEAT, BARLEY. BEAN AND SCREENINGS

for Stock and Poultry. For sale at lowest market rates. **BRAY BROTHERS** Buyers of Grain and Beans. Members of Merchants Exchange. **220 Clay Street, San Francisco.**
Established in 1855 Correspondence Invited

Notes of the Apple Show

The surrounding communities closed shop and joined with the Pajaro Valley in a general neighborly contest. Watsonville boosters had visited other communities and made the invitation so extended and warm-hearted that from San Jose to Salinas and Monterey the acceptance was as hearty as the invitation.

Prize Winners at This Year's Apple Show.

San Jose boosters joined in the great celebration and parade on Wednesday, 500 coming fifty miles in a special train.

The judges put in good long hours at their work, and we believe more conscientious work would be impossible. The names of the judges were given in last week's paper.

The packing houses of the city received many visitors during the show, occasion being taken by outsiders to observe how great quantities of apples are handled.

The Awards.

The quality awards were:

CARLOAD LOTS.

Sweepstakes—Best car single variety in the show—"Pride of Pajaro Valley Brand", Alaga Bros., Watsonville. Best car Red Winter Pearmains.

Newtown Pippins—1, Gospodnetich & Zegar; 2, Earl Fruit Co.

Bellflowers—1, L. S. Bradley Co.; 2, B. Pista & Bros.

Mixed Variety—1, Loma Fruit Co..

100-BOX LOT.

Sweepstakes—Best 100 boxes in the show—M. L. Kalich & Co., Watsonville.

Bellflowers—1, M. L. Kalich & Co., Watsonville; 2, Stephen Scurich, Watsonville.

Mixed Variety—1, Nick Banaz, Templeton; 2, A. Balich Fruit Co., Watsonville.

Newtons—1, Frank Radovan, Watsonville; 2, H. T. Davis, Watsonville.

50-BOX LOT.

Sweepstakes—Best 50 boxes in the show, Frank Radovan, Watsonville.

Red Pearmains—Frank Radovan, Watsonville; 2, Ewell Fruit Co., Santa Cruz.

Newtons—1, Milanovich & Pista, Hollister; 2, Copriviza & Gera, Watsonville.

Bellflowers—1, Gospodnetich & Zegar, Watsonville; 2, Stephen Scurich.

Mixed Variety — 1, Martin Bros., Watsonville.

Langfords—1, Yoke & Way Co.

Watsonville Poultry Show

WATSONVILLE POULTRY SHOW.

The aristocrats amongst the feathered tribe gathered in Watsonville during the Apple Show to the number of some 700. There were no pigeons exhibited, but the poultry breeds had a most generous representation. The judging was by Mr. Geo. D. Holden of Minnesota, one of the old-time and best known judges who gave the exhibitors information as to pure-bred poultry, and his awards were received with general approval. The display of cuts was one of the finest in the state. We heard many compliments for Superintendent Lewis of San Jose who cooped the show. On the whole, the show was a credit to the management of Mr. Andrews of Watsonville who was its inspiration and its hardest worker. The awards were:

The Awards.

White Orpingtons—Pen—1, J. W. Atkinson; 2, Mrs. S. Swaysgood; 3, H. H. Huber; 4, Otto Schuchard; 5, Mrs. F. W. Biebrach. Ck.—1, Swaysgood. Ckl.—1 and 2, Mrs. W. Frost; 3 and 4, Atkinson; 5, Schuchard. Hens—1 and 2, Stewart & Kimball; 3, Atkinson. Pullets—1, Atkinson; 2, 3 and 4, Frost; 5, Atkinson.

Rhode Island Whites—Pen—1, Mrs. H. McGowan; 2, Mrs. John More. Ck.—1, McGowan. Ckl. and Hen—1, Mrs. J. L. Moore; 2, McGowan. Pullet—1, Mrs. J. L. Moore.

Houdans—Pen—1, Cks.—1 and 2; Ckls.—1, 2 and 3; Hens—1, 2 and 3; Pullets—1 and 2, Schmidt & Gunther.

Faverolles—Ck.—1; Hens—1 and 2; Pullets—1 and 2, Jack Lee.

Columbia Wyandottes—Ck.—1 and 2; Ckl. 1, 2, 3 and 4; Hens—1 and 2; Pullets—1, 2, 3, 4 and 5, Schmidt & Gunther.

Buff Orpingtons—Pen—1; Ck.—2, W. S. Sullivan; Ckl. 1 and 2, W. S. Sullivan; 3, Mrs. S. Swaysgood. Hen—1, 2, 3, 4 and 5, Sullivan. Pullets—1, 2 and 3, Sullivan; 4, Swaysgood; 5, Goodacre Bros.

White Wyandottes—Pen—1, A. L. Jenkins; 2, J. W. Atkinson. Ck.—1, Jenkins. Ckl.—1 and 2, Jenkins; 3, Atkinson. Hens—1, 2 and 3; Pullets—1, 2, 3 and 4, Jenkins; 5, Atkinson.

Silver Wyandottes—Ckl.—Hen—Pullet—1, E. B. Neilson.

Barred Plymouth Rocks — Pen—1 and 2, Mrs. Hugh McGowan. Ck.—1 and 2, McGowan. Ckl.—1, B. B. Kennedy; 2, J. H. Leonard.

White Plymouth Rocks—Pen—1, A. A. Barnford; 2, A. S. Anderson; 3, Mrs. F. H. Nohrden. Ckl.—1, E. S.

Lander; 2, A. A. Barnford; 3, 4 and 5, W. A. Gerdes. Hen—1 and 2, Barnford; 3 and 5, Anderson; 4, E. D. Lawyer. Pullet—1, C. O. Preston; 2 and 3, Gerdes; 4, Lawyer.

Single Comb Black Leghorns—Pen—Ck.—1; Ckl.—1; Hen—1, 2 and 3; Pullet—1, 3, 4 and 5, E. L. Andrews; 2, Melinda Olason.

Partridge Plymouth Rocks—Ckl.—1; Pullet—1 and 2, H. D. Armstrong.

Light Brahmas—Pen—1, Wm. A. Ackerman.

Single Comb White Leghorns—Pen—1, W. R. Triggs; 2, Schmidt & Gunther; 3, W. D. McDougal; 4, A. G. Orton; 5, Mrs. Chas. Kuhlitz. Ck.—1 and 2, E. R. Everitt; 3, Schmidt & Gunther; 4, Kuhlitz. Ckl.—1 and 2, Schmidt & Gunther; 3, E. R. Everitt; 4, Schmidt & Gunther. Hen—1, Schmidt & Gunther; 2 and 3, Everitt. Pullet—1 and 2, Everitt; 3, L. D. O'Neal; 4, Everitt; 5, O'Neal.

Single Comb Buff Leghorns—Pen—1; Ck.—1, Lindgren Bros.; Ckl.—1, Lindgren Bros.; 2, H. H. Peck; 3, W. W. Ellis. Hen—1, Lindgren Bros. Pullet—1, Lindgren Bros.; 2, 3, 4 and 5, H. E. Hunter.

W. R. Triggs; 3 and 5, Jamison & Jamison; 4, R. H. Blohm. Pullet—1, 2, 3 and 4, Triggs; 5, Jamison & Jamison.

Indian Runner Ducks—All prizes—R. H. Blohm.

Bronze Turkeys—Ck.—1, Mrs. W. Bond; 2, Mrs. N. Johnson. Hen—1 and 2, Bond; 3 and 4, Johnson.

Buff Orpington Ducks—Drk.—1; Hen—1, Sallwell Bros.

Rouens—Ck.—1, W. R. Triggs.

White African Guineas—Ck.—1; Hen—1, W. R. Triggs.

White Holland Turkey—Pen—Ck.—1 and 2; Pullet—1 and 2, J. S. Genter.

Japanese Silkies—Hen—1; Pullets—1 and 2, Jack Lee.

Japanese Black Tailed Bantams—Ck.—1; Hen—1, Jas. A. Hall.

Golden Seabright Bantams—Ckl.—1; Pullet—1, Mrs. O. T. Smith.

Silver Seabright Bantams—Ck.—1, C. O. Preston; Hen—1 and 2, Jack Lee.

Rhode Island Reds—Pen—1, Jack Lee; 2, C. A. Bliven; 3, C. P. Gilmore; 4, Mrs. I. H. Tuttle; 5, L. D. O'Neal. Ck.—1, Lee; 2, Bliven; 3, Tuttle; 4, Gilmore; 5, Lee. Ckl.—1, Lee; 2, Tuttle; 3, Gilmore; 4, Bliven; 5, C. H.

A Pajaro Valley Poultry Yard.

Gold Laced Wyandottes—Pen—1, Mrs. L. Kirkland.

White Minorcas—Ckl.—1, H. H. Peck. Hen—1 and 2, W. W. Ellis. Pullet—1, Peck; 2, Ellis.

Single Comb Black Minorcas—Pen—2, Mrs. N. Hedegard. Ck.—1 and 2, W. A. Gerdes; 3, L. E. McLelland. Hen—1 and 2; Pullet—1 and 2, Gerdes.

Single Comb Buff Minorcas—Pen—1, Lindgren Bros.; 2, Mrs. I. H. Tuttle. Ck.—1, Lindgren; 2 and 3, Gerdes. Ckl.—1, Lindgren; 2 and 3, Gerdes; 4, Mrs. I. H. Tuttle. Hen—1, Lindgren. Pullet—1, Lindgren; 2, Gerdes; 3, Tuttle; 4, Gerdes.

Young Pekin Ducks—Ckl.—1 and 2, Smith. Hen—1 and 2, Lee; 3, 4 and 5, Bliven.

Buff Cochin Bantam—Pen—1, E. Lisle Keesling. Ck.—1; Hen—1 and 2; Pullet—1, Dr. W. J. Ramsey.

One of the notable exhibits was Pet McClave, a Buff Orpington, declared by Chas. McClave, formerly president of the National Association, one of the finest birds he had ever seen. In color the bird is almost perfect and from the fancier's standpoint worth an even $1000, but that amount would not purchase her from the present owners, Mr. and Mrs. W. S. Sullivan of Agnew.

POULTRY MANURE IN GARDEN.

Gardeners should use a little discretion in the use of poultry manure. Either fresh or raw, there is a possibility of using it in excess, and there are few gardeners who are so overstocked with this excellent fertilizer that they can afford to needlessly waste it. It should always be well mixed in with the soil by continuous working, and repeated plowing and harrowing will accomplish this if done persistently. Manure and plenty of it is the key to success in gardening, but with poultry manure too little is better than too much.

Plan to plant crops that live from year to year, like asparagus, rhubarb, strawberries and the like, at one end, so that they will not interfere when you cultivate the annual vegetables.

Keep the cultivator going through both orchard and garden.

Two essentials are necessary for the rapid maturing of vegetables—a soil made light with sand, and rich with well rotted manure, and a wind break.

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BURNS KEROSENE (Coal Oil)
Outshines city gas or electricity. Simple, noiseless, odorless, clean, safe, money-saving. Guaranteed. Write nearest office for catalogue M and learn how to get an Aladdin Mantle Lamp FREE.
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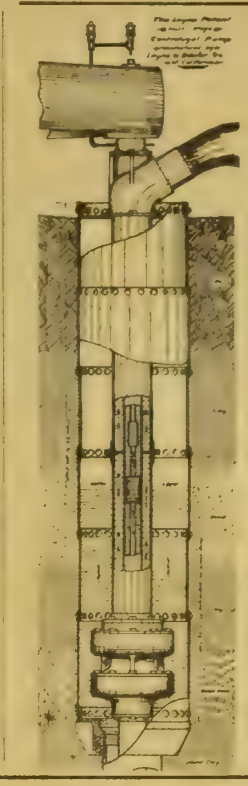

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ENCLOSED SHAFT
FOR THE
Vertical Lifting of Water
WITH
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LAYNE AND BOWLER CO
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Our importation of Dutch Bulbs has arrived. This stock is the very best, and our prices are low. Come and see the display or send for free Catalog at once. Also for our large Seed Catalog, if you haven't one.

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Even if you don't want one for four to six months, you can save 25 per cent by buying now. A special offer for cash, and to make room. 50-egg size only. Send for Catalog and particulars. Big bargain. Strong guarantee.

West Coast Seed House

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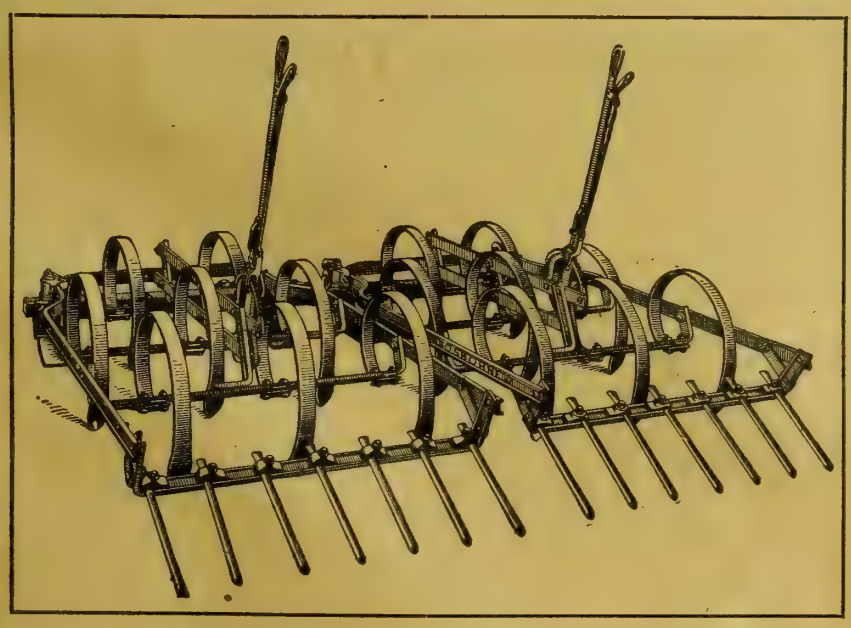
Free Catalogs of Everything for Poultry and the Garden



The Osborne Combination Spring Tooth Harrow

A glance will show the advantage of using this harrow.

It is a Spring Tooth and a Peg Tooth in One Unit.

The trailing teeth in the rear smooth the ground and break up the clods while they are fresh and leave the ground in fine condition. Costs a little more than old style harrows but several hundred users have learned that it is worth it. Made in 8, 16 and 24 tooth.

Send Us a Postal for the Most Complete Harrow Catalogue Ever Printed. Mention No. 8SC.

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112-118 South Los Angeles Street
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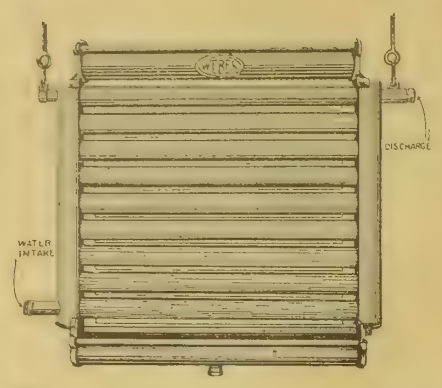
ESTABLISHED 1892
19 Years Successful Selling Implements

Weber Milk Coolers



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We manufacture our own Coolers and can supply Coolers and Aerators, any capacity, from one cow to 20,000 pounds per hour.

SEE OUR

Weber Cone Coolers

Sanitary and Durable, complete with 12-quart tank, $4.50. Will cool 30 gallons of milk per hour to within three degrees of temperature of water.

CREAM COOLERS, $2.50 EACH

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Easy Money For the Dairyman

Your money comes directly out of your cows. It makes a wonderful difference to your pocketbook whether your cows produce much or little. Have you ever realized what even one quart a day more from each cow means to you? Say three cents a day—that's more than $10 a year. With only ten cows it means $100 a year. Looks pretty big all in a lump, doesn't it? Now it's just "easy money" to get that extra quart, and oftentimes two quarts, by a simple and cheap change in your feed.

We are blessed in this country with nature's richest gift—"Alfalfa," which we all agree is an unrivalled feed for a dairy cow—but even the best should not be used alone—cows, just like human beings, need variety. Alfalfa is rich in protein, but is light in carbohydrates. A cow, in order to make the most milk, must have in her ration a sufficient amount of both classes of feed.

In Steam-Dried Beet Pulp is found the ideal combination with alfalfa to make a properly balanced ration. It is light, bulky, succulent and easily digested, absorbs water very quickly and swells to about six times its original bulk. It is cheaper than bran or rolled barley and produces better results.

The combination we recommend is 8 lbs. of Steam-Dried Beet Pulp with all the alfalfa hay the cow will eat, which will be from 15 to 20 lbs. daily. It has also proven to be a splendid green food for poultry. They are extremely fond of it.

STEAM-DRIED BEET PULP
Just Like Roots
Makes More Milk

Steam-Dried Beet Pulp is just the clean beets from the sugar factories (only the sugar extracted), which is **dried by steam.** Be sure you get the kind that's **steam dried,** always uniform in color and quality, never burned or blackened by smoke, always clean and pure. It is packed in 100-lb. sacks and will keep indefinitely.

Progressive feed dealers are rapidly placing Steam-Dried Beet Pulp in stock. Ask your dealer for it. If he does not keep it, write us. We will see that you are supplied promptly.

THE LARROWE MILLING CO.
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Be Sure it's Steam-Dried

Complete Pumping Plants
We select, purchase and install, **Guaranteeing Satisfaction** for our clients
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Live Stock and Dairy

Dairymen and stockmen are requested to write of their experience. Mrs. Sherman is always willing to answer queries and this, with experience of other workers, will make this department of greater value.

EFFECTIVENESS.

By Mrs. M. E. Sherman.

What qualities do we wish in our cows and how shall we secure them, are ever present questions. What are the desirable qualities? Twenty years ago I would have named a long list, but now I know that one grows out of the other, and all are bound up in a few necessary foundations. First of all in the herd, health is of paramount importance; next, productiveness of offspring; third comes the large flow of rich milk, and fourth, good looks. Now to consider these points briefly. Good health is placed first because unless a cow has vigor we will have nothing to pin the other qualities to. A sickly cow might as well be a dead one if we are running a herd for profit. Good health is founded on good digestion and proper assimilation of nutriment. Now a cow with a weak digestion can never be a great producer, for without food, milk can not be produced, and if the food is not consumed the cow is not fit to be in the herd and should be eliminated. Health must be built up by a constant and abundant supply of palatable food, as the foundation laid in youth establishes the habit of health.

Disease.

The freedom of a herd from tuberculosis and aborting is largely a matter of care in keeping out and removing diseased animals. They are easier to keep out of the herd than they are to cure. Tuberculosis can be cleaned out of a herd with small sacrifice if it is taken when the first evidence is discovered, the herd then carefully tested, and tuberculin diseased animals removed. The testing continued twice a year will soon end the trouble. Then only tested sires are added and nothing is likely to bring it into the herd. Aborting is deadly destructive to the herd. I really think that the avarice of the sellers of cattle has been the cause of this trouble, reaching to the remote ranches all over the coast. In many places the cows lose their calves several times in the fields before it is discovered. Then, too, there are herds in which the trouble seems to be chronic and the calves are dropped very weak and soon die of a form of white scours.

Shy Breeders.

There are in every herd a few shy breeders. These must be made into beef, as they eat up the profits. In a herd of fifty there may be two or three that have a calf every other year and are dry for several months. The heifer calves of these cows are apt to have the same habit increased in them, or be "worser," as the children say. Without health and without proper increase the herd is doomed.

Rich Milk.

The third desirable quality is large and rich flow of milk. Health with abundant feed is necessary to a cow in producing a flow of milk. A cow can not make milk without feed any more than the Hebrews could make bricks without straw. Like the Hebrews she will go if forced to try it very long. The milk flow has been bred into our modern cows by selection of the sons of the heaviest producers to head the herd. Inheritance of qualities and why one animal should inherit one way and another another way, has long puzzled scientists. In the human family the microscope has come into use to find the chromosomes of the living cells. It has been found that in the cells from any part of the human female these chromosomes number twenty-two, while from the human male they number twenty-one. Now these are inherited by the children, one-half from each parent, and bring out an infinite variety, as they are confused into bundles of inherited qualities. I give this theory for consideration but am not at all sure that it will bear the test of further investigation by the Carnegie people. If this proves to be true then it will explain the why of the passing of the acquired quality of a milk flow through the son to his daughters so freely, and of the same quality passing so slowly through his sons to their daughters.

The sire gives half the inheritance toward butter and milk production. Now if his dam has been a great cow he has a stronger inheritance to pass than if she has been merely a "cow." This butter quality the cow can absorb in a full degree and if she is a half way individual toward goodness, she will pass it on to her heifer calves in an increased ability. Now continued testing and weeding out of the weak in health and the poor producer for five or six generations, and continually pouring in an increased amount of prepotent blood on the male side, will bring the herd up rapidly. Prepotency or the "before force," will push the herd into production just as fast as general health can be built up to stand the strain. Function does modify form, it strengthens it, to withstand the pressure. I have frequently to tell purchasers that are just starting into the dairy business with ordinary cows that a sire from a thirty pound in seven days cow will not give them any better results than a sire from a twenty pound one. Why? Because the sire may have the force, but if the cow has not the strength it will not go. You may hitch a mule to fifty tons, but no matter how determinedly the mule tugs the load will not move. The sire is the mule trying to move the inert mass of the cow's lack of acquired form. Let the same sire be bred to a cow of like quality and the offspring hardly ever fails to be superior.—M. E. Sherman.

A SAILOR AND FOUR HORSES.

Jack London admits that when he tackled a team of four horses he knew nothing more about it than when he undertook to sail the "Snark" across the Pacific ocean. "I taught myself as I sailed," he writes in Sunset Magazine for September, "and what I knew about horses, much less about breaking them, was just as much as any sailor knows. But when Charmian and I decided it was about time we knew what we had in our own county and the neighboring ones, I threw my chest out and my shoulders back. 'What man has done, I can do,' I proclaimed grandly, and I went at it. My greatest trouble was with Prince, a many-gifted love horse from Pasadena. Prince is not vicious; he is merely a good-natured rogue, who shakes hands for sugar, steps on your toes out of sheer excessive friendliness and just goes on loving you in your harshest moments. But he will not get out of the way of the wheelers. Also, whenever he is reproved for being in the wrong, he accuses Milda of it and bites the back of her neck. So bad has this become that whenever I yell 'Prince!' in a loud voice, Milda immediately rabbit-jumps to the side, straight ahead, or sits down on the leadbar. All of which is quite disconcerting. Picture it yourself. You are swinging a sharp, down-grade, mountain curve, at a fast trot. The rock wall is the outside of the curve. The inside of the curve is a precipice. The continuance of the curve is a narrow unrailed bridge. You hit the curve, throwing the leaders in against the wall and making the pole-horse do the work. All is lovely. The leaders are hugging the wall like nestling doves. But the moment comes in the evolution when the leaders must shoot out ahead. They really must shoot, or else they will hit the wall and miss the bridge. Also, behind them are the wheelers and the rig, and you have just eased the brake in order to put sufficient snap into the maneuver. If ever team-work is required, now is the time. Milda tries to shoot. She does her best, but Prince, bubbling over with roguishness, lags behind. He knows the trick. Milda is half a length ahead of him. He times it to a fraction of a second.

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Maid, in the wheel, over-running him, naturally bites him. This disturbs the Outlaw, who has been behaving beautifully and she immediately reaches across for Maid. Simultaneously, with a fine display of firm conviction that it's all Milda's fault, Prince sinks his teeth into the back of Milda's defenseless neck. The whole thing has occurred in less than a second. Under the surprise and pain of the bite, Milda either jumps ahead to the imminent peril of harness and lead-bar, or smashes into the wall, stops short with the lead-bar over her back, and emits a couple of hysterical kicks. The Outlaw invariably selects this moment to remove paint. And after things are untangled and you have time to appreciate the close shave, you go up to Prince and reprove him with your choicest vocabulary. And Prince, gazelle-eyed and tender, offers to shake hands with you for sugar. I leave it to anyone; a boat would never act that way."

MOST PROFITABLE FEED FOR PIGS.

Three lots of alfalfa pastured pigs were fed respectively one-half, one and one-half and two and one-half pounds of corn daily for every hundred pounds of pigs. Those fed the least grain made the largest net gain in proportion to grain consumed, but they gained more slowly, and at the end of the test had a more stunted appearance. The daily profit for each pig was larger with those fed the next highest grain ration, and the largest with those fed the most grain. In another experiment, three lots of thirty pigs each were fed respectively one pound, two pounds and a full ration of grain daily to each 100 pounds of pigs. The pigs on light grain feed required 230 days to fit for market, and gave a profit on the grain fed of $179.40. The pigs on medium grain took 221 days, and gave $179.01. Those on full feed were ready for market in 165 days, and gave $168.30 profit, showing but a small margin to cover risk, labor, interest and extra alfalfa required in keeping the pigs the longer time on the lighter grain feed.—Field and Farm.

BUTTER SCORING CONTEST.

By Leon Davis.

If the butter sent to the fifth scoring of this year is representative of that which the competing creameries are furnishing their respective markets, the quality of California butter is much better now than in August. Out of a total of twenty-one entries, 66 per cent scored 93 or above, as against 20 per cent at the fourth entry, and a permanent improvement of this nature is what our creamerymen must work for. The results of this scoring show the highest average for the year, and that our California buttermakers can make good butter if only given good cream to work with.

The scores as placed by Mr. W. B. Thurston, Federal dairyman, Mr. E. H. Hagemann, of our dairy department, and the writer were as follows:

Creamery	Location	Score
Laton Co-op. Cr.,	Laton	95
University Farm Cr.,	Davis	94¾
Grizzly Bluff Cr.,	Grizzly Bluff	94½
Suisun Creamery,	Suisun	94
Visalia Co-op Cr.,	Visalia	94
Cal. Poly. School,	San L. Obispo	94
Dairy Delivery Co.,	Gustine	94
Cottonwood Cr.,	Cottonwood	93½
Ceres Creamery,	Ceres	93½
Dairymen's Co-op. Cr.,	Tulare	93½
McFarland Cr.,	McFarland	93½
Sta. Ysabel Cr.,	Paso Robles	93
Salinas Cr.,	Salinas	93
Glenn Co. Cold Storage,	Weltons	93
Riverdale Co-op. Cr.,	Riverdale	92½
Delta Creamery Co.,	Imperial	92
San Ramon Valley Cr.,	Danville	92
Berkeley Butter Co.,	Berkeley	90½

One of the most common criticisms offered on flavor was a light, undeveloped or flat flavor. The cooler weather in many parts, and the fact that the buttermakers have not become adjusted to the changed condition, may account for this. One of the entries criticised for a flat flavor was found to contain but .52 per cent salt, an amount too low, unless catering to some special market, as salt is necessary to bring out the desired flavors. A few pieces gave evidence of feed flavor, a defect for which the buttermaker is not responsible. The feeding of turnips and other related feeds in such quantities as to taint milk and cream is a condition which can be remedied only by dairymen, and we must look to them to help overcome this defect. The churning of cream produced under the most sanitary conditions results in bad tasting butter if it is tainted with feed flavor. Probably one of the most satisfactory ways of overcoming feed flavors is by pasteurization.

Of special interest to the competing buttermakers is the outcome of this year's work, closing with the next entry, which will be called for about the middle of November. Better support has been given this year's contest than heretofore, and a total of 40 buttermakers have participated at the various scorings. Several from smaller plants whose supply is low both in quantity and quality, deserve special mention for their efforts, as they have sent an entry each time, the scores on which have been rather discouraging. Present indications are that the race for prizes will be close as there is now but one-half point difference between the two highest individual averages.

Prizes for 1911.

There will be three prize cups for those having the three highest averages, respectively, of the six separate scorings during the year.

A special prize cup will be awarded to the individual sending either five or six consecutive entries showing the most marked improvement in methods and quality.

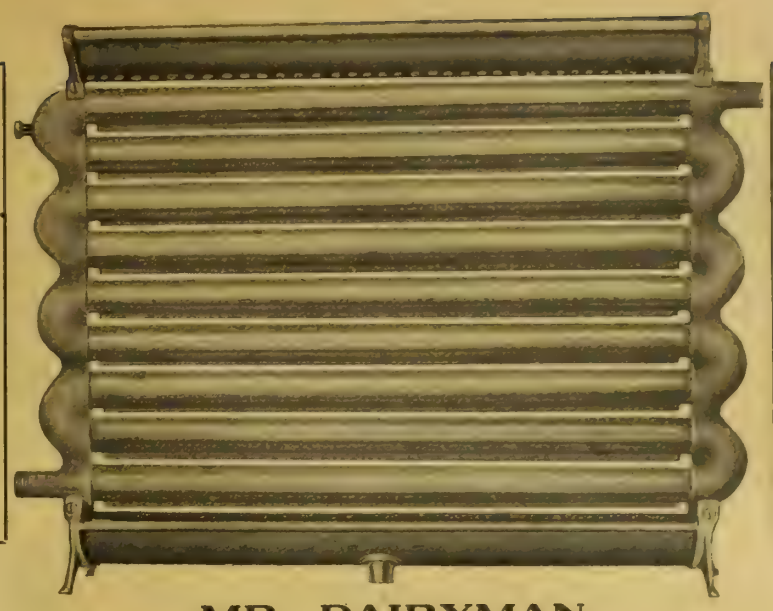
A silver butter trier will be awarded to the individual having the highest average score on five consecutive entries.

Contestants are limited to one prize.

A certificate of merit will be awarded to each contestant whose six scorings average 92 or above.

A certificate of merit will be awarded to each contestant sending but five entries whose average score is 93 or above.

EFFICIENT



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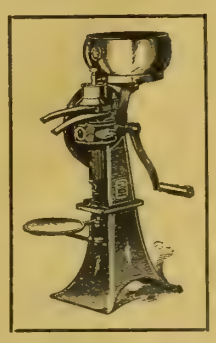

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The wasteful losses of any "gravity" setting system or poor cream separator are always greatest when the milk is often cool or the cows are old in lactation, and under these conditions, with butter prices highest, the use of the best cream separator becomes even more important than at any other season, so that a

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Why delay your purchase of a De Laval until another Spring. Put it in now and let it save its own cost meanwhile. And as to that you may either buy for cash on on such liberal terms that the machine will actually pay for itself.

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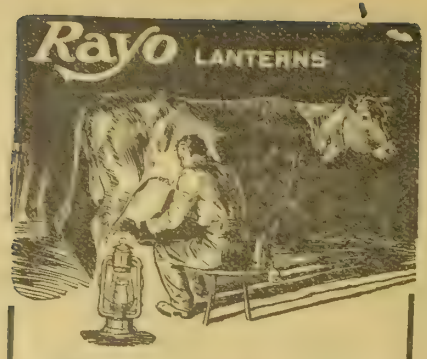

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Waterville, Douglas County, Washington, will hold a potato carnival.

Small Fruits and Vegetables

GARLIC.

The garlic industry was introduced into Texas a few years ago by the Italian gardeners of Galveston County, says the Texas Farm and Fireside. Garlic belongs to the onion family and requires similar care in cultivation. It is propagated from "clons" or "sets" exclusively. Clons are parts of bulbets of compound bulbs, and are comparable to the cores of the multiplied onion. They are planted either in the fall or early in the spring. Garlic stands more cold than the onion and can be planted in the fall with safety.

The Italian market gardeners of Galveston County, especially at Dickinson, have demonstrated that it can be grown in commercial quantities with profit.

Garlic always commands a fair price. The present demand in the United States is supplied almost exclusively by Italy and Mexico, as it is grown only to a very limited extent in this country. The Italian gardeners in this state are growing the Italian variety, which is recognized as being superior to the Mexican variety.

Garlic will thrive in a variety of soils, but prefers a rich sandy loam. The Italian market gardeners of South Texas thoroughly prepare their land by deep fall or winter plowing and follow this by harrowing. They then lay the land off in straight rows about eighteen inches apart and plant the sets about every six inches in the rows. Cultivate with hand plow, and hoe in such a manner as to prevent the crusting of the soil. If the soil is not naturally rich in humus and plant food, an application of 1000 pounds of nitrogenous fertilizer per acre will largely increase the yield.

When the tops turn yellow and fall, the garlic is ready to pull. Select a dry time to harvest the crop, braid the tops in long strings and hang up to dry in a well protected shelter. These strings of garlic are generally marketed in sacks holding fifty pounds.

In the fall of 1908, I visited the Italian growers of garlic at Dickinson and secured sets sufficient for a thorough test on my farm at Pauli. The sets were planted in November and the crop harvested in May. My soil is a deep sandy loam, moderately fertile. The garlic made a splendid yield and thoroughly demonstrated its adaptability to the soils of Montgomery county. There are thousands of acres of similar soils in South Texas where garlic has been successfully tested.

RAKING AND BURNING.

I never rake and burn in my garden. In fact, there is nothing to rake in the spring, for the garden is kept at work winter and summer, growing something to eat.

In the fall, after the frost destroys the tops of the summer vegetables all the dead growth is raked and hauled to an out-of-the-way place in a pile with a little lime scattered over it.

During the summer all the refuse from the kitchen is dumped on the same pile and covered with lime to keep the flies off. The pile is chopped down and turned occasionally, and by fall it is a black, rotten mass and goes back on the garden.

The winter sees the garden cleanly cultivated with spinach, kale, parsnips, salsify and carrots standing in rows, and onions from sets coming on for the table in late February.

Then there are some hardy bulbs that I grow for the florist, thousands of candidum lilies, which I have shown to the trade, can be better grown here than in France.

In the spring my early peas and other early vegetables go in between the rows of kale and spinach that will soon be finished; and the parsnips, salsify and carrots and late beets come out before the ground is needed for the later tender things.

The entire garden gets a coat of stable manure, annually in the spring, and to this I add a mixture containing eight per cent of phosphoric acid and 10 per cent of potash at a rate of 1000 pounds an acre.

To get good crops in the garden, we must make and keep the soil rich and well supplied with organic decay. In the intensive work of a garden of moderate size we cannot afford to grow clover and other humus-making crops and must use the stable manure.

Then, so far as insects are concerned, the garden kept clean all the year will not be so much bothered with them. However, I spray all the crops with insecticides and fungicides regularly but I never burn anything that can be rotted down to aid in the humus-making.—Farm World.

SUBSTITUTES FOR ASPARAGUS.

Years ago, when we did not have asparagus in our gardens, we made use of various substitutes. A good one is hop sprouts. They come up from the root crown about as numerously as asparagus sprouts. They are rather slim, but when cooked like asparagus by a good cook they are quite palatable. We have also used a certain kind of lettuce (Lactuca augustana) advertised for such purpose by European seedsmen. The leaf stems of this were cooked like asparagus. It was all right, too, but not equal to the true asparagus. Then we tried Swiss chard, the wide leaf stems and mid ribs of which are also recommended and will do when you have nothing else.

The hop sprouts are available during the asparagus season. The other substitutes, of course, are somewhat later. This search for substitutes, however, shows in itself how valuable and desirable a vegetable we have in asparagus.—Farm and Fireside.

THE GREEN CABBAGE WORM.

Give children a few cents to make nets of mosquito bar and catch the white butterflies flitting over your cabbage and cauliflower fields, since the female moths deposit the eggs from which the cabbage worm comes. Children might well be paid, also, for picking off the green worms before they have done much injury.

Spraying with Paris green is quite commonly practiced, and cabbage will stand a strong application. A market gardener of our acquaintance uses a spray as strong as five pounds of Paris green in a fifty-gallon barrel of water. Cabbage may be sprayed up to within a week or so of being gathered, when necessary, without any damage whatever, or any danger.

PICKING CUCUMBERS.

With many growers it is the custom to pick cucumbers three times a week. In some of the large establishments they arrange the picking so that some fruit is taken off each day and the vines are gone over every other day. It is not best to let the fruit grow too large as they will not sell as well, as a rule, although some buyers prefer large fruits. At any rate the seeds in a very large cucumber are very much harder than in a fruit of medium size and hard seed are objectionable when the cucumbers are to be used as slicers. Furthermore, the development of the seed is very exhaustive to the plant. Therefore, the earlier in the development of the fruit it is gathered the better for the plants.—Market Growers Journal.

According to Bailey, varieties of most of our vegetables and fruits have been cultivated for thousands of years. There were evidently many plant breeders long before Burbank. Lettuce has been known for over two thousand years and originally was found in Europe, Asia and Africa. The cabbage, which comes from Europe, has been grown for over four thousand years. The watermelon has been cultivated for over four thousand years also. Its original home is tropical Africa so the negro "comes honestly" by his liking for this luscious product of our garden.

Root crops should be planted together, as well as vine crops, such as cucumbers, melons, etc., also tomatoes, peppers, egg plant and the like.

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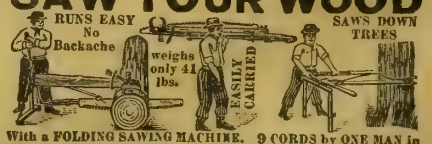

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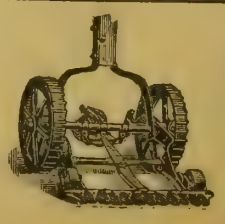

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The Ornamental Garden

PROPAGATION OF LILIES.

Lilies are propagated by scales and bulblets, and although rather a slow process, requiring three or more years to bring the young bulbs to a flowering size, we have the satisfaction of knowing that they are vastly more enduring than the imported bulbs, and that if correctly treated the majority of species will prove of permanent interest and value. Amongst those that produce bulblets in the axils of the leaves are the old tiger lily, and its altogether more refined and handsome varieties, splendens and flore pleno. L. Canadense and the Bermuda lily are also well known species bearing bulblets, which almost invariably appear upon the whole length of stem. Towards the end of the summer they assume a very dark color, and as soon as they separate very readily from the axils of the leaves they should be collected, and stored in sand until the following spring.

Some species and varieties do not produce bulblets, but we have a ready means of increase by detaching a few of the outer and mature scales, and laying them horizontally upon a mixture of sand, cocoanut fibre and charcoal dust, and then covering them lightly with the same material. In the course of six weeks roots will appear on the basal part, and often on the edges of the scales, and when it is seen that a few have been formed, they should be placed a couple of inches apart in boxes or deep pans filled with a compost consisting of equal parts peat and loam, with a small quantity of leaf-soil and sand added. Their winter quarters will be the greenhouse shelf, and from spring onwards an unheated frame, and this also applies to the first-named. It may be explained that the continental growers obtain huge supplies of bulblets by lacerating the basal part of inferior bulbs. These are partially cut through in various directions, and are then planted in a light and sandy soil. Having experimented in this direction, writes Walter H. Aggett in the Gardeners' Magazine, I can testify that it is simply astonishing to see the behavior and efforts of the bulbs to perpetuate their species, each crevice becoming literally a mass of small bulbs. I commend this practice to amateurs who may wish to propagate lilies, and a single bulb of each species will be sufficient to commence with. In dealing with the bulblets I would advise that they be grown in boxes for a couple of years, as they require far less attention than when placed in small pots, and when they have developed to the size of a billiard ball they should be potted, and it will be found that pots four and a half inches in diameter will be none too large for them.

The more hardy, robust and accommodating species may be planted in the open garden to form permanent colonies; in fact, almost without exception lilies can be successfully grown in this way, and failures that are recorded may invariably be traced to mismanagement, or to imported bulbs having been planted, and it is well known that the most popular lily, namely, L. auratum, is of little use after flowering. Under the most careful treatment only a very small percentage bloom the second year, and it seems a great pity that the bulbs should be mutilated and denuded of every vestige of basal root prior to exportation by the Dutch and Japanese growers.

By far the most successful colonies of lilies will be seen in close proximity to, or between, shrubs, such as rhododendrons, etc., and we gather from this that the shrubs throw just the requisite amount of shade on the surface; also that the masses of thread-like roots emanating from the shrubs effectually prevent saturation in winter, a combination of favorable circumstances which has much to do with the eminently satisfactory results obtained under these conditions. —Gardening.

Poppies will perpetuate themselves by self-sown seed.

ASSISTANT FOREST RANGERS.

The Civil Service Commission will hold an examination for Assistant Forest Ranger on October 23-24, 1911. The United States Department of Agriculture estimates that 400 eligibles will be needed during the field season of 1912. Assistant Forest Rangers are paid an entrance salary of $1,100 per annum. The examination will be held at National Forest Headquarters.

The law requires that, when practicable, forest rangers must be qualified citizens of the state or territory in which the national forest on which they are appointed is situated. Since the list of local eligibles must be exhausted before eligibles residing in other states can be appointed, the chance of citizens of outside states who go to national forest states and take the examination to secure an appointment is small.

The requirements and duties of forest rangers are thus described in "The Use Book," which contains the regulations and instructions for the use of the national forests:

"A ranger of any grade must be thoroughly sound and able bodied, capable of enduring hardships and performing severe labor under trying conditions. He must be able to take care of himself and his horses in regions remote from settlement and supplies. He must be able to build trails and cabins, ride, pack, and deal tactfully with all classes of people. He must know something of land surveying, estimating and scaling timber, logging, land laws, mining, and the live stock business.

"On some forests the ranger must be a specialist in one or more of these lines of work. Thorough familiarity with the region in which he seeks employment, including its geography and its forest and industrial conditions, is usually demanded, although lack of this may be supplied by experience in similar regions.

"The examination of applicants is along the practical lines indicated above, and actual demonstration, by performance, is required. Invalids seeking light out of door employment need not apply. Experience, not book education, is sought, although ability to make simple maps and write intelligent reports upon ordinary forest business is essential.

"Where saddle horses or pack horses are necessary in the performance of their duty, rangers are required to own and maintain them. The Forest Service furnishes no personal or horse equipment.

"Rangers execute the work of the national forests under the direction of supervisors. Their duties include patrol to prevent fires and trespass, estimating, surveying and marking timber, the supervision of cuttings, and similar work. They issue minor permits, build cabins and trails, oversee grazing business, investigate claims, report on applications, and report upon and arrest for violation of forest laws and regulations."

The examination will consist of questions regarding the use of the forest, supplemented by a field test to show the applicant's fitness to do the actual work of a ranger. Education and experience will be rated on the answers to the questions on these subjects in the application form and on the applicant's use of English in the written test. Horses for the tests in riding and packing will be provided by the Forest Service.

The examination is under the control of the Civil Service Commission, and not of the Forest Service. Information in detail regarding it, including the names of the places at which it will be held, will be sent to anyone applying to the United States Civil Service Commission, Washington, D. C.

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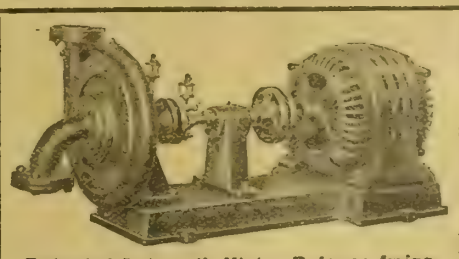

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BIGGER WALNUT CROP

J. B. Neff of Anaheim estimates the walnut crop ten to twelve per cent in excess of last year's. The European crop is large but poor in quality on account of dry weather.

TONS OF 'COTS

An error was made in the news notes of a recent Cultivator when it was stated that Ventura County had produced 22,000 tons of apricots this year. There was one cipher too many. It should have read 2200.

CITRUS FAIR

Butte County boosters, especially those at Oroville, are busy with plans for a citrus exposition to be held at Oroville December 5 to 9. Butte County produces some remarkably fine early fruit, and the citrus fair at that date should enable it to make a great showing.

WATCHING TARIFF TINKERING

A tariff committee of the Walnut Growers Association of Southern California has been appointed in the persons of Messrs. C. Thorpe of Santa Paula, J. A. Osmun of Rivera, and A. J. Stewart of Fullerton, to watch the coming national congress in its work of tariff reduction.

California is producing the principal part of the English walnuts consumed in the United States, but both the eastern and western shores are receiving under the three cent protective tariff many tons of foreign nuts. If the industry can be fostered and placed upon a footing where we can supply sufficient so that there is no need for their coming from the East and the West, much money will be kept in this state. Walnut producers have gone none too soon into this fight. One feature will be the securing of information as to cost of producing nuts in Europe, transportation and other factors. Mr. Hazzard of Whittier will soon leave for Southern Europe to gather such information as he can find.

FARMERS INSTITUTES

Prof. W. T. Clarke, Director of Farmers Institutes in Northern California, informs us of institutes to be conducted in Kingsburg, Fresno County, October 19, 20; Tulare, October 23, 24; Corcoran, 25, 26; Armona, October 30; Lemoore, October 31. Other institutes were held at Napa October 12, 14, and at Selma, October 17, 18. Prof. Clarke writes that he has just returned from a string of institutes in Lassen, Siskiyou, and Shasta Counties. He also says: "These institutes were held at towns well away from the beaten track. For one of these held in Lassen County at Bieber, we had to make a sixty mile stage ride. Altogether to cover the series in question, i. e., Little Shasta; Bieber and Fall River Mills, we traveled by auto stage two hundred and one miles. The interest manifested in this work, however, in these out-of-the-way places, more than justified the labor involved. We have also preparations under way for actual dates for institutes at Clovis, Los Banos, Newman, Reedley, Madera, Turlock and Merced.

"A very hopeful feature of the institute work is the very great interest that is shown by the people in the more practical phases of farm operation that we are able to present to them. We find that in the work that the veterinarian may do, more good is accomplished if he actually has animals to deal with, so we are encouraging the bringing in of sick animals to the institute and are holding regular clinics. This takes well. At some of our institutes we have had very good poultry shows and this has helped our poultry lecturers very greatly in their work. Altogether the season seems to have opened well."

VALUE OF CO-OPERATION

A moment's chat with Mr. G. W. Pierce, almond grower at Davis, Yolo County, brought out the value of co-operative marketing of farm crops. Mr. Pierce is a member of the California Almond Growers Exchange, and he remarked that the success that has been gained by the almond growers through the exchange movement will greatly increase the number of trees planted this season. He informed us that practically every nursery tree in the state had already been sold for next season.

Mr. J. P. Dargitz, manager of the Exchange, writes:

"The market has become stronger each week for the last month, and IXL are all cleaned up now. Very few Ne Plus and Nonpareil are left, and the Drakes and Languedocs are moving out also. We have been able this year to ship nuts just as fast as we could get a carload together at any one point, and in several cases have localed from one point to another in order to make up cars to satisfy the demands for almonds."

This shows that the market has already been practically cleaned of this season's nuts, and this, with absolutely f.o.b. sales, California common points, "without any discount whatever." One change made in the method of selling this year is in giving absolutely net weight. Heretofore the bag has been weighed. Now they sell net weight but charge a uniform price of seventeen cents for each bag.

THE APPLE SHOW

With everyone of the five judges placing awards on the exhibits at Watsonville's big show last week from other states than California, the management felt that justice would be done to every exhibitor and that the judges themselves would have less embarrassment. The presiding judge was Mr. G. E. Rowe of Michigan, and the others, Messrs. Dumas of Washington, Sinsel of Idaho, Stanton and Bateham of Oregon. The carload exhibits were given most thorough examination, not only was the beauty of the surface pack observed, but ten boxes from each car were dumped and every individual apple in the ten boxes carefully inspected.

The sweepstakes car award was anticipated, partly because of its general appearance and partly because the winning firm was the winning firm last year and it was known that their carefulness in packing would give uniformly fine fruit.

The box exhibits were very spotted, that is, some of the most excellent fruit was indifferently packed, while next to it might be a perfect pack of almost perfect fruit. Some districts showed a liking for especially large fruit, but as a rule the boxes had the appearance of the regular commercial pack.

The show should have many lessons for the growers of the Pajaro Valley, as it surely had for many attending from other sections of California. The better pack of finer conditioned fruit was noticeable in comparing the show with that of last year, and we doubt not another year will show still greater advancement. We say another year because the Apple Annual Association will doubtless be continued indefinitely and the Pajaro Valley make this its annual festival.

AWARDS FOR BEST KEPT FARM

The Sacramento Valley Irrigation Company which has extensive holdings in Glenn and Colusa Counties and which has installed an irrigation system covering these lands, is taking a very wise course in inducing better care of the farms now being started under the system. These lands of which the company has now nearly 150,000 acres, were formerly used in grain farming and have called forth no attractive improvements. They are now being subdivided into 20, 40 and 80 acre farms. Many of those who have purchased are eastern people, some having no previous farming experience.

Mr. D. B. Ross, General Manager in charge, informed us that the effort of the company at this time was more along the line of conservation of the enthusiasm of these settlers than any other. To that end it has installed a department of agriculture under the supervision of Mr. W. S. Guilford, and under him are engineers to lay out the irrigation systems for the farms, landscape architects to advise as to disposition of the grounds, and vegetable gardeners to give information along those lines. Besides there are contests yearly between the farmers. The story of this year's contest will be given in next week's Cultivator. It is simply referred to on this page to whet the appetite for something good, because the contest is full of interest, and we believe has in it suggestions for other communities. Of course there are but few sections situated as are these lands, but in this contest may be some ideas of value. Last year one prize was offered, though really two were given. This year eleven were offered, and the story of their winning will be intensely interesting.

REDIRECTING SCHOOLS.

The County Life Commission with delegates from various educational and other bodies of the state gathered at the University Farm at Davis last Saturday and discussed the needs of rural common schools; in fact, the redirecting of the whole school system of the state. There was some little spirit thrown into the meeting by the presentation of a resolution calling for state supervision of all schools. At present each district is a law unto itself except as the State University has a certain oversight of high schools in accrediting students. The resolution called for an appropriation of $250 as a bonus for each high school installing a special teacher of agriculture, this amount to be applied on such teacher's salary, and $150 bonus toward the salary of each additional special teacher installed for a special agricultural course of one year. For a special course covering two or more years a $500 bonus is called for for the first teacher, with $300 for each additional teacher. Another provision called for $10 per school per annum which should go to pay for inspection by a member of the Division of Agricultural Education of the College of Agriculture of the State University.

These resolutions were attacked on two scores. In the first place many felt that the seventh and eighth years of the grammar schools should also receive the bonus as it was shown by statistics that 93 per cent of grammar school pupils do not attend the high school. Another point at issue was the making of appeal for a definite appropriation, as this might prove a bugbear to the state legislature who must be appealed to for the passage of the law. Incidentally, there was some feeling that the naming of the supervisor for the schools should also be left to the state legislature. A compromise was effected by which both plans were partially adopted and were referred to the Country Life Committee for harmonizing.

It is hoped the result of the meeting will pass the resolution stage and accomplish something for bettering the smaller schools of the state. The strongest appeal made in the convention was for giving to the little one-room school so far as possible, equal advantages with the larger schools in the more thickly settled sections.

Agricultural News Notes of the Pacific Coast

Northern California

Glenn County expects to add 5,000 acres of alfalfa to the present planting.

A Gridley, Butte County, farmer has cleared about $90 per acre on cucumbers.

Maywood Colony, Tehama County, has set out 400 acres of eucalyptus trees.

One believer in Modoc County will plant 200 acres to apples the coming season.

The bean crop of the Sacramento Valley is now being loaded on the river steamers.

Some hop growers are so hopeful of the market that they insist the price will yet touch 75 cents.

Sheep shearing has been concluded in Glenn County. The clip has been fully up to the average.

Butte County claims to have produced one-tenth of the state's dried peach crop for this year.

The apple crop of the Paradise district, in Butte County, is of better quality this year than ever before.

Farmers of Little Shasta Valley, Siskiyou County, are interested in the project of developing irrigation water for their lands.

A creamery company has been organized at Fort Jones, Siskiyou County, and incorporated with a capital stock of $25,000.

The hop men of Sonoma County are seriously embarrassed by shortage of baling cloth, many growers being unable to bale at present.

The Board of Education of Petaluma has leased a couple of acres adjoining the school and will instruct pupils in agriculture.

The horticultural commissioner of Yolo County reports that the continued cool weather has made a serious problem for raisin producers.

The Santa Rosa Poultry Association and Egg Exchange has moved into its new warehouse. There are over 200 stockholders in the association.

Delegates from all over the state met last Saturday at the University Farm at Davis to discuss ways and means for improving school instruction of children in the county.

A big deal has been closed in San Francisco whereby 25,000 acres of Yuba and Butte Counties will be placed under irrigation. Two great reservoirs are to be built in Dry Creek to store the water.

The Livermore Valley Poultry Association has been organized, with W. H. Bissell, President, and Eugene P. Sabin, Secretary-Treasurer. One of the projects of the association is a big breeders show in February.

One almond tree on the Bidwell ranch at Chico yielded ninety-five pounds of nuts this season. The orchard in which the tree grows has forty-three acres, which yielded 326,000 pounds of almonds selling at from 12 to 15 cents per pound.

Sebastopol, Sonoma County, has been chosen as the next meeting place of the State Grange. Officers elected for the following year are: Master, E. T. Pettit, of Cupertino; Overseer, W. E. Stewart, of Danville; Lecturer, W. V. Griffiths, of Gardnerville; Steward, Chas. E. Collins, of Dinuba.

Central California

Anthrax has appeared among the cattle at Farmersville, Tulare County.

A raisin stemming plant is to be installed at Turlock, Stanislaus County.

The creamery and cheese factory at Novato, Marin County, was destroyed by fire recently.

Fresno fruit growers are anxiously awaiting action by Dr. Wiley on the sulphured fruit question.

The State Grange Patrons of Husbandry met at Visalia last week for their thirty-ninth annual.

Farmersville, Tulare County, has finished its fruit season, and is busy now with shipping dried fruits.

Raisin drying, already late because of the cold season, has been still further delayed by the recent rains.

The Fresno County Fair, held last week, had the finest exhibit of live stock ever shown in that county.

Greenfield, Monterey County, has found apricots so profitable that extended plantings will be made this year.

The large acreage sown to alfalfa in the Poplar section, near Porterville, this year is showing remarkable growth.

Campbell, Santa Clara County, observed October 16 as "Squirrel Day," when the squirrels were treated to poisoned grain.

A Wasco farmer has determined by several years experiment that he can make more profits from potato raising than fruit growing.

The citrus growers of Tulare County met at Porterville recently and were addressed on soil improvement by Prof. C. B. Lipman.

Citrus growers of the Porterville district are agitating the matter of securing appointment of an inspector of fertilizers for their district.

Tulare County has a large exhibit at the Omaha Land Show. It will later be sent to Chicago for the Land and Irrigation Exposition there in December.

Two clam diggers at Port Watsonville were arrested by the game warden for having in their possession clams less than thirteen inches in circumference.

The squirrel inspector of Tulare County reports "99 per cent of the farmers of this county are trying to comply with the requirements, and 75 per cent have succeeded."

Residents of the Worth district, near Porterville, have organized an independent telephone company, to be known as the Rosedale Rural. A. Chalmers is president.

The fifth annual fair of the Fresno County Association last week was given a record breaking attendance, and a good exhibit was made of the agricultural resources of the county.

Orange growers of the upper Tule district, near Porterville, expect to begin picking next week, and are somewhat worried over the marketing of their crop on account of the railroad strike.

It has been suggested that a joint building be erected at the Panama-Pacific Exposition for exhibits of the counties of Amador, Calaveras, Merced, Mariposa, Stanislaus, San Joaquin, Tuolumne and Contra Costa.

Southern California

Walnut picking is started at Camarillo, Ventura County.

The Imperial County Fair will be held at El Centro November 20-24.

Los Angeles capitalists have purchased olive orchard properties at Hemet.

Paso Robles, San Luis Obispo County, has appointed a city squirrel inspector.

San Bernardino dairymen have raised the price of milk to ten cents a quart.

Six hundred and fifty tents are now being used by orange growers of Orange County.

Date palms at the government experiment station at Mecca are now ripening their fruit.

The Tri-Counties Reforestation Committee held an interesting meeting at Redlands last Thursday.

The new sugar factory at Huntington Beach is just closing a very successful first season's run.

The annual meeting of the Anaheim Fruit Association was held on Wednesday of last week.

Alfalfa seed threshing at Murrietta, Riverside County, shows a seed crop not as heavy as last year, but of fine quality.

The great Irvine Ranch in Orange County has harvested some 14,000 acres of lima beans and 4,000 of blackeyes.

The California Creamery Operators Association will be in session at San Luis Obispo during the last week of November.

Two thousand acres on the Santa Margarita Ranch, near Oceanside, San Diego County, are being prepared for planting sugar beets.

Agents of the Southern Pacific have asked its employes to aid so far as possible in discovering any invasion of the dreaded alfalfa weevil.

Last year, for the first time, citrus fruit was sold at auction in California. This policy will be continued this season. First sales will open in Los Angeles about November 10.

Manager J. M. Waterman of the Lima Bean Growers Association estimates Southern California's crop of limas will be worth some $5,000,000.

The lemon rate decision of the Interstate Commerce Commission having been upset by the Commerce Court, lemon growers are gathering their forces for a renewal of the fight.

The cotton mill at Calexico which was burned a few months ago has been replaced. Machinery is now installed, and the plant is ready to be operated. It can handle twenty to thirty bales of cotton daily.

Hundreds of acres of rich bottom land in the San Luis Rey Valley have recently changed hands, and it is anticipated that development work will soon begin. The hay and grain crop on the land east of the valley has been exceptionally heavy.

A big irrigation project is being started in the Amargosa Valley, in the northeastern part of San Bernardino County. Water has been found to be only about twenty feet below the surface, and it is planned to put in an underground dam and raise the water.

The Coast

Merrill, Oregon, has been promised a beet sugar factory.

Spokane's National Apple Show will be held the last week in November.

Wheat and rye are being seeded on the grain land about Finley, Washington.

Oriend, Washington, has shipped several carloads of hay to British Columbia.

One farmer near Walla Walla, Washington, will plant 10,000 apple trees the coming season.

One Montana ranch near Helena is stocked with 200,000 sheep, and 600 sheep dogs are used in herding them.

The Wallowa County wool growers made sales of more than 25,000 sheep at Joseph, Oregon, within ten days recently.

A number of irrigators near Salem, Oregon, have found they are losing their rights because of illegal form of filing on water.

Apple picking is on in the Hood River district of Oregon, and indications are that the crop will not be sufficient to fill orders.

A hop grower at Sheridan, Oregon, declares that Oregon hops, in order to compete with the California crop, must be picked clean.

Young orchards near Myrtle Point, Oregon, are suffering from depredations of deer, which strip the trees of both foliage and bark.

Heavy rains for the last month have delayed threshing in the section about Sydney, Montana, and slightly injured the quality of the grain.

Eighteen thousand acres of fine land in lower Butte Valley, near Dorris, on Klamath Lake, Oregon, will be reclaimed and irrigated.

Occasional showers with general warm weather have combined to make exceptionally good pasturage in the dairy district about Bay City, Oregon.

An expert of the Department of Agriculture has been gathering apples of the Hood River section to test as to which varieties prove best keepers in cold storage.

The cattle owners of Elko County, Nevada, have been the victims of cattle rustling to such an extent that they have called in the Nevada and Idaho authorities to put a stop to it.

During the last week 100 carloads of apples have been shipped from Wenatchee, Washington. Nearly 1,000 carloads will be pooled by the Wenatchee Fruit Growers Association this fall.

Walla Walla, Washington, one of the four cities in that state which has a city fruit inspector, has made a determined effort this season to exclude from the market all infected fruit.

Prune growers of Clark County, Washington, suffered a loss of $375,000 to crops because of rain. The growers assert that another year they will protect each tree with umbrella-like tents to prevent damage by the rain.

The provinces of Saskatchewan, Manitoba and Alberta will show an area in spring wheat this year of nearly ten million acres. Much of the new acreage will be sown by farmers from the United States who have lately emigrated to Canada.

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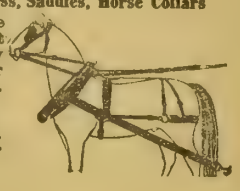

Profit in the Poultry Yard

Practical poultry people who may have ideas from their experience as to methods of feeding and housing and general care of poultry will confer a favor upon the Cultivator and its circle of readers by sending in concise accounts. Mrs. Basley is always willing to answer queries, which with the experience of others should make this a most valuable feature in poultry life on the Coast. Opinions or matters of a personal nature should be omitted, but a concise statement of facts is always valuable.

WHEN TO HATCH.

By Mrs. A. Basley.

Solomon has said "there is a time for everything under the sun," so there must be a best time for hatching chickens.

"When you are in doubt consult nature." If we consult nature she will undoubtedly say the spring is the proper time, the only time for hatching feathered fowl of all kinds.

Wild birds only lay their eggs in the spring time, and it is only in the spring that nature gives them the proper food for raising the young. Then again other birds like the domestic fowls and pigeons have been for thousands of generations trained to lay eggs the year round and to hatch them when man so desires.

In Egypt, where the hatching for thousands of years has been done in enormous hatcheries, the hens have lost the natural desire and instinct for incubation, yet even there the hatcheries are only used during the spring months, when nature would hatch.

The introduction of incubators into America, however, and American progressiveness have, one might say, changed the course of nature, making it almost a question of convenience or expediency when to hatch chickens.

I have hatched successfully every month in the year in California, so I know it can be done, but it is not always expedient to do so, and for the benefit of beginners I will relate some of my experience.

When first I came to California I was informed by a poultry man that he never used his incubators later than March for there was no use in trying to raise late hatched chickens. Another breeder who was raising about eight hundred chickens per year and hatching only with hens told me that he hatched whenever the hens wanted to set, except during August and September, as he found that chickens hatched during those two months did not mature any quicker, nor lay any sooner than chickens hatched in October, and he did not see the use of having to feed and care for chickens for two months extra, and those two months at the hottest time of the year. He was a very successful breeder, winning at the shows whenever he exhibited. His winning pullets were hatched in April, May and June, his cockerels earlier, usually.

The best brood I ever hatched came out on Thanksgiving day, the last Thursday in November. I found that the eggs as a rule were not as fertile in the fall as in the spring and after some years of experience I refused to sell eggs for hatching in the fall.

I remember one time an eastern breeder who had just arrived, came to me in the fall and wanted to buy several settings of eggs. I told him that I did not care to sell so early in the season, but he argued, "You are running your own incubators why should you refuse me?" I explained to him that I could not guarantee the fertility of the eggs so early and rather than have customers disappointed I made a rule of not selling. I acknowledged that I hatched for myself at that season. He still persisted that nearly all the hens appeared to be through the moult, all were in vigorous health, were being fed the ration for fertility and he would be perfectly satisfied with a forty per cent fertility for he knew the difficulty of getting fertile eggs at that season. I let him have several sittings and he was more than satisfied with the results.

I made a practice of hatching every egg that I could in the fall, commencing towards the end of September or first of October and my reasons for so doing were, first, that it paid.

My object was to get cockerels that would be vigorous breeders at eight-een months of age or in the early spring when they were about that age, while those that were culls would be in good condition either as broilers or fryers in the winter and bring high prices then, as there would be but few then on the market; so I was after cockerels first, and here I made some rather interesting discoveries which year after year were confirmed by a long series of experiments.

I had read (as I sometimes still read) in poultry magazines that the male birds ought to be entirely separated from the female during the summer or at any rate during the moult, or whenever the eggs were not being used for hatching. I read that it was necessary to give the birds a complete rest, in order that they might be in a vigorous condition when they were wanted for breeding. Theoretically this sounded plausible and I tried it, and to my great disappointment I found that the male birds that had been my best breeders did not regain their vigor for months, and some of them never again.

The organs of reproduction had become atrophied or dormant by disuse and it was not until the following spring (nature's own season) that they became active again. Since making sure of this from many experiments, I have never entirely isolated the males that have been mated. I always leave two pullets with each. It really made me feel sorry for the male bird; he would at first fret so for the customary society and even when put with cockerels to police them and prevent them from quarreling he seemed out of place and restless.

To have fertile eggs in the fall we must again consult nature and copy her rations at the time when she has fertile eggs—that is in the spring time.

First—The rations then are tender greens just sprouting and grubs and worms with but little grain, for then the grain is all sprouting. Then again by the spring time the fowls will not be so fat as they were in the fall when nature provided a liberal supply of grains to give the necessary fat to keep them warm in the winter. By the spring time they will have lost that, still they will be vigorous and active. To have fertile eggs in the fall or at any time we must duplicate the conditions of spring time. Give an abundance of tender green with sufficient animal food, and to induce exercise the grain should be fed in deep straw so the hens will have to scratch and work for it.

When I began hatching in the fall my object was to get fall hatched cockerels. It was cockerels I wanted. From past experience I had found that when I mated cockerels to old hens I usually had a large preponderance of cockerels, so I mated two year old hens to cockerels. Sometimes I mated only three hens to a cockerel, sometimes as many as ten. I also tried two-year-old males or even older with the hens in the fall, with the following results and discoveries, which I relate, not as conclusive evidence, for as the old saying is "One swallow does not make a summer," and it would take more than one year's experiments at an agricultural station to prove that what I am relating as my experiences are always and conclusively the same.

First I discovered that I could not absolutely govern the sex; secondly, I found that some males sired more males than females and that it was not the most vigorous males that sired the most males; it was the smaller, younger or less matured birds; thirdly, I discovered, and this experience occurred over and over again, that the first eggs laid by hens after a period of rest, such as the moult, and also the first eggs of pullets, hatched more females than males and also that the darker shelled eggs (mine were White Plymouth Rocks) contained females oftener than males. I found that the first eggs laid after a rest were nearly always darker or else spotted with dark marks, and that when in the fall I was most anxious to get males there were more females than males, as it was just after a period of rest. This was a disappointment to me at

first, but later on I found that among those females hatched in October and November were my very best layers.

I might have known that pullets hatched from hens that were laying in the fall just when eggs cost the most would be likely to lay plentifully at that same time of year, but I did not realize it until the conviction was forced upon me by my own experience. Not all of the pullets were the best layers, but a preponderance of my best layers were hatched in the fall. After I had found that among my own White Plymouth Rocks the cockerels hatched in the fall were my best breeders and that the pullets were remarkably fine layers, I made it a rule to hatch every hatchable egg then. "Like begets like," if you hatch from the hens that are good fall and winter layers you will run a good chance of getting offspring from them that will come up to their mother's achievements, and if you know how to breed and mate them to males of the same good strain you will keep on improving your breed until you have grand layers.

A person can breed for whatever he or she wants—for fine feathers in the show room; for the best of table fowls for market; for prolific layers; for layers of large eggs, of colored eggs, or of white eggs. It is all a matter of selection and a study of the breeding qualities of your fowls. By just making up your mind what to do and how to do it and keeping the one object in view all the time you will succeed, there is no doubt about it.

But to return to our question: "When is the best time for hatching chickens?" Spring time, March, is the best time; but you can hatch also whenever your old hen wants to sit. You must remember, however, to give the chicks as nearly as possible the conditions of spring. The reason that I say spring is the best time is because it is nature's time and the eggs will be more fertile then; the fertility will be stronger and the chicks also. Very much depends upon the way in which the parent birds are cared for and the food they have. To have strong healthy chicks the parents must be vigorous; aim for vigor in your poultry yard first and foremost, and then for whatever you most want.

EXTENSIVE POULTRY FATTENING

A bulletin entitled "Fattening Poultry," describing successful methods of fattening poultry on a large commercial scale, and giving complete data on the feeding of over 100,000 birds, has just been issued by the United States Department of Agriculture. It gives information of operations on an extensive scale, and so far as known is the first publication showing the cost of producing a pound of gain in poultry.

"The successful feeding of poultry depends largely on the ability of the feeder to notice the condition of the chickens on feed," is one of the fundamentals laid down by the bulletin. "The common practice in poultry packing houses is to feed each lot seventeen days or less. Most of the milk fed chickens are fed fourteen days. Practically all of the special feeding in this country involves the use of milk, which produces the 'milk fed chickens' of the market. Milk, while the least expensive, seems to be the most essential constituent of the ration, and when a feeder cannot get milk in some form he generally does not attempt to fatten poultry commercially.

"Crate feeding from troughs is the method employed in this country by most of the large fattening establishments, with six to ten fowls in a crate. Birds fed only for a short time may be forced on highly concentrated feeds, whereas if fed longer they may need a ration containing a greater variety and less concentrated.

"Milk seems to have a very important influence on the digestive process, keeping the fowls in good condition under forced feeding. Beef broth is used to some extent, but it is not as good as milk. At the beginning fowls should be fed lightly for two or three feeds, gradually increasing the amount until they do not clean up all that is given to them. The main object should be to keep their appetites keen and at the same time have them consume as much feed as they can assimilate. By feeding a small amount often they will eat a greater quantity and their appetites will remain keener."

The conclusions reached by the investigation show that general purpose fowls make more economical gains in fattening than the Mediterranean class. The average person will get better results in fattening by feeding three times rather than twice daily. It was found that the average cost of feed and labor per pound of gain for a large lot of poultry was 9.09 cents, and the cost of the feed alone was 7.10 cents. It was also observed that hens made less gain than chickens in crate fattening, and that low grade wheat flour was a more economical feed than oat flour at the present prices of grain.

CLEAN DRINKING FOUNTAINS.

One of the difficult problems for the poultrymen to solve is how to easily provide pure, fresh water for his fowls, says the Southern Farm Advocate. Many patent fountains which are on the market are automatic and keep before the fowls a certain quantity. Under certain conditions these fountains serve an admirable purpose. Under more adverse conditions many of these patent contrivances fail to give satisfaction for the simple reason that it is impossible to keep them clean.

If fowls were fed only whole grain and the weather was always cool, it would be a comparatively easy matter to provide satisfactory automatic drinking fountains, but as soft food forms a considerable portion of the diet for laying hens and fattening fowls, these fountains are necessarily more or less fouled, and in warm weather soon become unfit for use as drinking fountains on account of the tainted water and disagreeable odor.

A simple, wholesome arrangement may be made as follows: Place an ordinary milk pan on a block or shallow box, the top of which shall be four or five inches from the floor. The water or milk to be drunk by the fowl is to be placed in this pan.

Over the pan is placed a board cover supported on pieces of lath about eight inches long, nailed to the cover so that they are about two inches apart, the lower ends resting upon the box which forms the support of the pan.

In order to drink from the pan it will be necessary for the fowls to insert their heads between these strips of lath. The cover over the pan and the strips of lath at the sides prevents the fowl from fouling the water in any manner, except in the act of drinking.

Where drinking pans of this kind are used, it is very easy to cleanse and scald them with hot water as occasion demands.

This arrangement can be carried a little further by placing a pan, or what would be still better, a long, narrow dish, something like a tin bread tray, on a low shelf a few inches from the floor, and hinging the cover to one side of the poultry house so that it can be tipped up in front for the removal of the dish or for filling it with water.

The pullet, in the pink of condition, that has just commenced laying, placed on exhibition in the show room for a few days, stops laying for a month or more, and frequently when shown in the fall shows, moults. The same effects frequently follow changing a bird from one pen to another. Birds accustomed to a certain individual are often frightened by the presence of a stranger or by an unusual garment on a regular attendant. These disturbing influences interfere with and upset egg production. The rule should be, keep the fowls in a quiet and contented condition.

To succeed in poultry keeping a person must be adapted to the business, first of all, by having a natural liking for the fowls themselves. The farmer who cannot tolerate the sight of a hen, and improves every opportunity to shy a stone at her or to dog her from the barn or garden can hardly expect to receive a bountiful supply of eggs for his favors.

Shut the hens out of the nest boxes at night. They will creep in there if they can to roost. It is warmer there and they like it; but what a mess they make of the nest.

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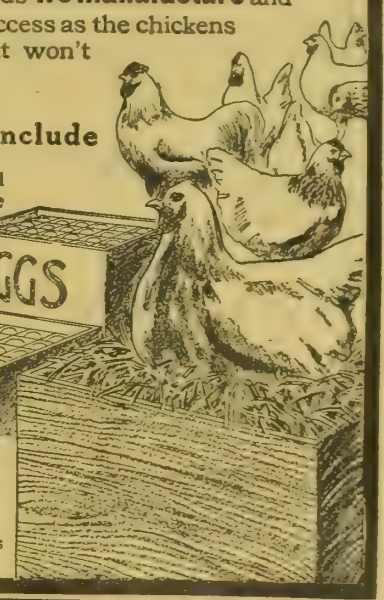

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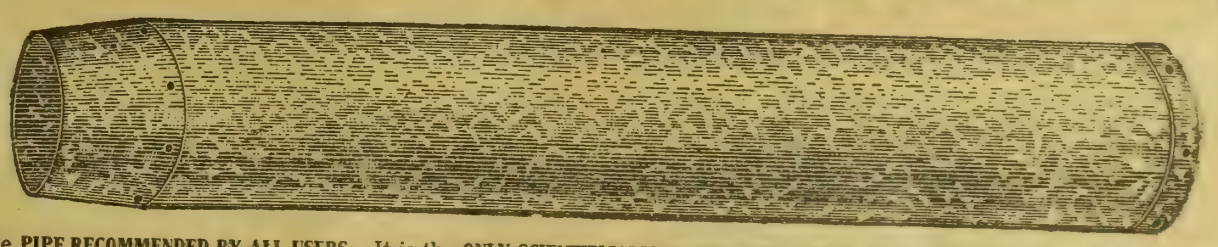

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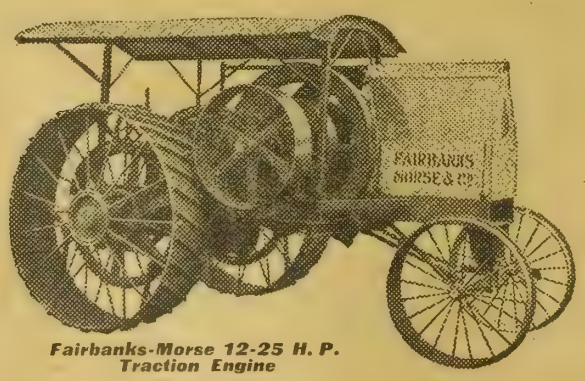

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Enforcing Agreement of Sale.

In agreement of sale of real estate in California if the buyer fails to pay installments can the seller get judgment against him, if he has property in another state, and make him pay the installments? Who would have to pay the costs of the judgment? The agreement of sale reads as follows: ". . . and upon failure to comply with the terms of this contract agrees to vacate said premises and peacefully surrender same to said party of the first part. And it is hereby understood and agreed by the parties of the first and second parts hereto, that upon any default in the payment of the sums herein specified, or any of them, or of the interest thereon when due, according to the terms hereof, then this agreement shall be null and void, and any and all sum and sums paid by the party of the second part to the party of the first hereto, shall be forfeited to and retained by said first party as rents, and settled and liquidated damages for the non-fulfillment of the terms and covenants in this agreement made by the said second party hereto."—Reader.

The seller has his option to sue for the installments, or to cancel the contract. If the seller prevails in the action the buyer must pay the costs. The judgment can be enforced in another state by suit upon it there.—E. L. P.

Divorce.

How soon after a wife deserts her husband can he bring suit for divorce? Does divorce on grounds of desertion dispense with the interlocutory decree? When is final decree given? Does it divorce both husband and wife?—Reader, Tulare.

Divorce proceedings may be instituted after one year from date of desertion. Interlocutory decree is not dispensed with. Final decree is granted twelve months after interlocutory. Both are divorced.—E. L. P.

Maintenance of Wife.

A married B twenty years ago in California, A having at the time twelve acres of land and a few months wages due him. He has now accumulated by close living and wise investments, money and property, the money as fast as made by him being put out on small mortgages in his name and bringing in an income of $125 per month, more or less, this being loaned out again, and the family living on what the ranch brings in, any surplus being also loaned. B is hardly able to get any money for clothes and school books for self and children. In case A left B, what could she claim of the mortgages, and how? How can B have things fixed to insure getting her share and also a stated amount per month for maintenance? Two children are over eighteen, and four under. What is legal age for a boy in California?—L. L., San Diego.

The proceeds of the twelve acres of land and other property which he had on hand when he married is the separate property of the husband, and remains such as long as it can be traced from one investment to another. All property earned by either spouse during marriage is community property. If A should desert B, a court in a divorce proceeding granting her a divorce on that ground would have the right to divide the community property between her and him, unless the real estate had been homesteaded, and in that case the court might assign the homestead to B for a limited period, or might order it sold and the proceeds divided, unless it had been selected from the separate property of the husband, and in that case it would have to be assigned to him eventually, although it might be given to her for

(Continued on Page 377.)

Questions and Answers

THE EDITOR AND STAFF

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Leg Weakness.

Some of our half grown chickens seem weak in the knees or legs and one or both legs sprawl out of shape and they stand on the knees. Would like to know the cause and remedy.—Subscriber.

There are two causes for leg weakness in chickens. You remember our rule of three—comfort, exercise, proper food. The two causes are the neglect of the two last "rules." The chickens have been fed a ration with insufficient muscle making elements; and they have not exercised enough to keep their legs strong. If they have a ration too starchy, with not enough green food and animal food, their bones and muscles become weak and flabby and have not the strength to support them. Also if they are not encouraged to scratch by having to scratch for the grain or by not having to run after plenty of grasshoppers, that induces weakness. The little cockerels seem to be more liable to this trouble than the pullets, and I would advise you to eat those weak legged brothers and see that the others have a chance to work and make vigorous fathers. A weak legged cock is no use for heading a pen; he cannot properly fertilize the eggs; so you had better fatten and market those.—Mrs. A. B.

Weak Back.

I have had several cases among my Rhode Island Reds of what appears to be paralysis of the back or legs. Fowls cannot walk.—Subscriber.

It is probably leg weakness and comes from a wrong diet. Give more bone and muscle making food, that is, more protein and less of the starchy elements, and above all encourage scratching.—Mrs. A. B.

Plant Lice on Almonds.

Can you tell me what is the matter with my almond trees? The ends of the twigs or tender shoots on some of them present the appearance of curl leaf, and after a while the leaves dry up and the ends of the shoots die. I thought it must be the red spider, but can find no insect at work on them. I send specimens.—J. B. C., Greenfield.

This query was answered by Prof. H. J. Quayle, of the Southern California Pathological Laboratory. He writes:

"The specimens of almond twigs from Greenfield appear to have been infested with plant lice. This is based upon the fact that several molted skins of such insects were present, as well as a couple of specimens of Syrphus fly larvae, which feed upon plant lice more generally than any other insects. It is of course possible that the curling of the leaves may be due to some other condition of the tree or soil which cannot be diagnosed in a small twig. It is not characteristic red spider injury, although the red spider is probably the most important almond pest in the state."

Renewing Vineyard.

I have just secured a small vineyard of Concord grapes three years old and shamefully neglected. Never have been pruned, are overgrown with grass and weeds, many are dead. How should I proceed to restore it? Can the vacant places be filled by layering. Will cuttings taken last fall but not planted in the spring grow if planted this fall? Is there any rule as to frequency of irrigation?—Reader, San Carlos, Ariz.

Such a vineyard does not offer a very attractive outlook, but if some of the vines are fairly strong and healthy, thorough pruning and putting up the strongest canes on trellises or wires, deep plowing, and replanting spaces, will probably give crop sooner than to start in with new vineyard. We would not proceed by layering, but would use cuttings taken this fall from the vines after they are perfectly dormant. Cuttings taken last fall, if they have formed a good root system, may be reset and will give slightly better results than the unrooted cuttings. No rule can be given for irrigation, for that depends upon your care, the subsoil conditions, age of vineyard, etc. Some soils are never irrigated, others as often as once a month. If the irrigations are sufficiently deep and cultivation thorough, two or three irrigations for the year should be sufficient, though that presumes a heavy winter rainfall. What the rainfall is at San Carlos we do not know, so cannot answer this question.

Indian Runners.

How many Indian Runners is it safe to keep in one yard? Is it better to divide space and put fewer ducks to each yard as with hens, or can you yard a large number together with good results, so long as you are not breeding? They have best of care, a tank of fresh water daily, feed alfalfa meal, corn meal, bran and beef scraps. Have recently noted a few weak legs. What is cause and remedy? They have ample sleeping room, dry and clean, with fine shavings.—R. H. H., Whittier.

This query was answered by Mr. C. E. Pryor of the Long Beach Poultry Ranch, as follows:

"It is not 'safe' to keep over fifty ducks in one yard. The yard for this number should contain 2500 square feet and should be swept clean every two weeks at least. They will lay better if kept in small flocks. The ideal way is to keep ten ducks and a drake in each yard. Divide your yards so that they will be long and narrow in preference to a square shape. This facilitates feeding all from one end and gives the ducks more room to exercise and allows them to go to the far end of the yard when anything in the alleyway frightens them, as they are easily frightened and a fright has a tendency to stop their laying. The best feeding ration is a wet mash composed of 8 parts bran, 4 parts corn meal, 2 parts alfalfa meal, 1 part blood meal or beef scrap. Feed this night and morning, all they will eat up clean. At noon a feed of chopped green stuff or lawn clippings, all they will eat. Leg weakness is caused by faulty feeding or damp quarters as a rule, but sometimes seems to be born in them. They should have grit, shell and charcoal before them all the time, and where this is done there is very little if any leg weakness if the quarters are not damp."

Breeding to Sire.

Would it be all right to breed a heifer to the same male she is from?—Subscriber, Selma.

While the harmful results in this form of breeding are not nearly as great as used to be believed, yet to gain anything by it requires judgment and knowledge. The faults and the perfections are both liable to be increased in the offspring. If both animals have a given fault the inbred offspring will usually show it to degree detrimental to their value. All the new strains are made by cross breeding, and they by breeding brother to sister, or father to daughter, or mother to son. I believe in this case the question rather refers to an accident and I would say if it is a heifer that is dropped raise it but out-breed it strongly in the next sire.—M. E. S.

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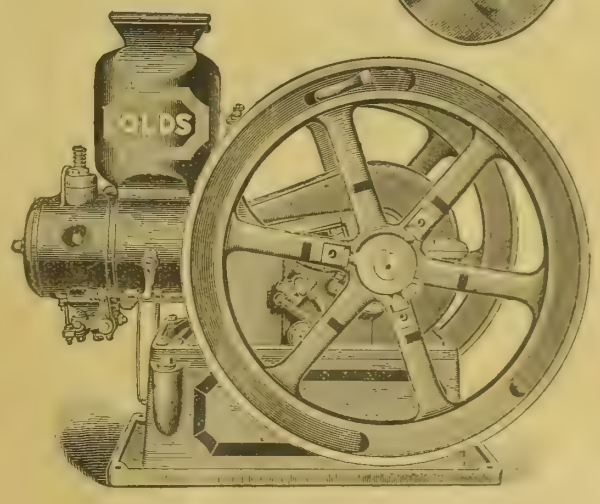

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Local Representative Wanted—Splendid income assured right man to act as our representative after learning our business thoroughly by mail. Former experience unnecessary. All we require is honesty, ability, ambition and willingness to learn a lucrative business. No soliciting or traveling. This is an exceptional opportunity for a man in your section to get into a big paying business without capital and become independent for life. Write at once for full particulars. Address E. R. Marden, Pres. The National Co-Operative Real Estate Company, L 448, Marden Building, Washington, D. C.

Young, Strong, Healthy German wants a position with one of the leading tree nurseries. He is able to prune and trim trees, but would like to have an opportunity to learn pruning and grafting. Address Box C, California Cultivator.

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Have You a Cow?—Have you a creamery? Have you a cheese factory? Write us. Everything used in either a dairy, creamery, cheese factory, or for handling milk, cream, butter or cheese. We are in a position to quote you prices on entire creamery or cheese-making outfits. We make a specialty of only the latest and best sanitary machinery and supplies. Send us a list of what you want, and we will quote prices which we feel certain will interest you. O. J. Weber Co., 225-227 East Sixth St., Los Angeles, Cal.

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Citrus—150,000 sweet and sour seed bed stock, first class in every particular. Also one and two year Eureka lemon, Washington Navel and Valencia nursery stock. Waxed budding cloth by mail or express. Can ship on short notice 1 to 500 yards. 50 yards and up, 28c per yard; smaller quantities 30c per yard; postage added. C. W. Wilhite, Glendora, Cal. Home phone 2062.

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Fine Line of Navels, Valencias and Eureka Lemons for delivery spring of 1911. Contract now and get the first choice. The King Citrus Nurseries, Whittier, Cal.

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Several Thousand Each of Washington Navels, Valencias and Seedless Grape Fruit trees, 1 ft. to 2 ft. high, at 35c for this fall's planting. Orders entered now for delivery spring of 1912. Carroll B. Smith, Box 9, Redlands, Cal.

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See Here. If you want some of the best stock in this world, we have it. All thoroughbred S. C. R. I. Reds, Black and White Minorcas, Crystal White and Black Orpingtons and Barred Rocks. Orders filled as catalogued. Baby chicks, hatching eggs, cockerels, and a few pens. Address, Monte Rio Poultry Yards, Newcastle, Cal.

For Sale—Pullets, cockerels and yearling White Orpingtons (Cook strain), Black Minorcas (Northrup strain), White Minorcas, R. I. Reds (Tompkins strain), pure bred. C. U. Chamberlin, Los Gatos, Cal.

Day-Old Chicks, Barred Rock and White Leghorns, good laying strain. Order now to insure early fall delivery. The Fairmount Hatchery, 29 B Rural No. 1, Santa Cruz, Cal.

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Just Hatched White Leghorn Chicks every month, from select, heavy laying, mature stock. No pullet eggs used. Lodi Hatchery, E. Elm St., Lodi, Cal.

White Leghorns—Buff Orpingtons. Bred for beauty and great egg production. Grand lot of both old and young stock for sale. Prices reasonable. Write your wants. Model Poultry Farm, Box H, Irvington, Cal.

Hicks Jubilee Hatchery, now booking orders. Write us your wants. We use eggs from first-class stock only. Try us. W. J. Hicks, Petaluma, Cal.

For Sale—White Minorca cockerels, January to April birds, good matings. Robson, Box 35, Rialto, Cal.

Western Hatchery—We are booking orders for day old chicks hatched from well selected, well bred stock. Write for prices and terms. Western Hatchery, Western Ave., Petaluma, Cal.

Schellville Hatchery. Thoroughbred White Leghorn chicks, hatched from heavy winter layers. The kind that pay. No dead or weak chicks charged for. Order early. Box R 72, Sonoma, Cal.

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Thoroughbreds—Buff Rock and Buff Leghorn pullets. Also a few Buff Rock cockerels, special prices. G. E. Candee, Ellenwood Drive, Eagle Rock, Cal.

For Sale—Handsome thoroughbred Buff Orpington cockerels, $2 each. All from large prize stock. Need room. Mrs. C. O. 1624 Angus St., Fresno, Cal.

Barred Rocks Exclusively—Some fine cockerels for sale. Now booking orders for hatched chicks. Eggs for sale. Write for prices. G. L. Hawley, Madera, Cal.

I have a choice lot of pure bred Brown Leghorn young roosters. Will sell at $1 each or six for $5 if taken before Nov. 1. Lee Dudgeon, Soledad, Cal. R. D. 1.

The Luedkes—Incomparable R. I. Red high record layers. Eggs by the hundred $6.00. Fancy matings $3.00 for 15. P. O., Anaheim, Route 1.

S. C. Rhode Island Reds—Fine big pullets for sale at $1 each. L. Haynes, Madera, Cal.

Rose Comb Black Minorcas, nine years line bred. Stock and eggs in season. Eleanor Farm, R. D. 1, Los Angeles, Cal.

Barred Plymouth Rocks—The kind that "win and lay." Eggs and stock for sale. C. H. Vodden, Los Gatos, Cal.

Kellerstrass Crystal White Orpington Eggs $2 per 13. R. L. Warren, National City, Cal. R. D. 1.

TURKEYS

For Sale—Beautiful thoroughbred Bronze turkeys for breeding purposes. Get off car at Mayflower. Mrs. J. R. Cutting, 30 Violet Ave., Monrovia.

GEESE

For Sale—Mammoth Toulouse geese, S. C. R. I. Reds and Brown Leghorns. Write for prices. Fowler & Masterson, Duarte, Cal.

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Plants of all kinds, wholesale and retail at Las Palmas Greenhouses, Palo Alto, Cal. Contracts solicited. Let us know your needs at once.

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Free—"Investing for Profit" Magazine. Send me your name and I will mail you this magazine absolutely free. Before you invest a dollar anywhere, get this magazine—it is worth $10 a copy to any man who intends to invest $5 or more per month. Tells how $1,000 can grow to $22,000; how to judge different classes of investments; the real power of your money. This magazine for six months free if you write today. H. L. Barber, Publisher, R. 430, 28 W. Jackson Boulevard, Chicago, Ill.

For Sale—Pigeon guano, at the Los Angeles Pigeon Farm; the best fertilizer for orchards, especially for young trees. It saves money in freight and labor, as one ton is equal to 15 or 20 tons of stable manure. In carload lots, $10 per ton; small orders 50c per sack. Address, J. Y. Johnson, General Delivery, Los Angeles. Phone East 1652.

For Exchange—for lemon trees for next spring's planting. Good as new E-M-F 30 Auto, 1911 top, glass front and speedometer. Shock absorbers. New tires. Ward Realty Co., San Dimas, Cal.

The Bell Agency. A general public service bureau, 833 Market St., San Francisco. Attends ot anything for anybody. Bank references. E. D. Dement, Mgr.

Lime and Gypsum for the Land—Lime for spraying. Best quality. H. B. Matthews, 733 Merchants Exchange, San Francisco, Cal.

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Wild Plant Improvement Gardens, Santa Ana, California. Newton B. Pierce, proprietor. Rare choice ornamentals and new fruits from all lands.

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True to Name

Do you expect to plant any trees this season? Have you determined upon the variety? Have you decided where you are going to buy? Are you satisfied that you are getting the best? Will the trees be "True to Name" and high grade?

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is still complete. Catalog and price list mailed on request.

Write us at once.

TREES TRUE TO NAME. THE SILVA-BERGTHOLDT CO. NEWCASTLE, CALIF. PLACER NURSERIES

Veterinary

Answers in this column by Fred G. Matthews, M. S., D. V. M., 1232 Central Ave., Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Eczema.

A mare, eight years old, fed a ration consisting of two quarts of rolled barley and two quarts of bran two or three times a day, has been troubled with an itching skin disease for about two years. Lumps about the size of a pea appeared along the neck and then extended to other parts of the body. She rubs some places raw and uses her teeth upon the skin of the breast. I had her teeth filed and was advised to give sulphur in tablespoon doses, which I did till she had taken four pounds. The lumps disappeared, but have returned.—H. D. W., Fair Oaks.

Mix three parts of neat's foot oil and one part of creolin, shake and apply freely to the itching sruface once every four days. Aiso give the mare one tablesponful of hyposulphite of soda in the feed two or three times a day.—F. G. M.

Breeding After Abortion.

A mare served July 7 aborted Sept. 25 and about an hour later passed the premature afterbirth. I have not worked the mare for six weeks, but she is nursing a colt four months old. There was no evidence of an accident, and I know no cause for the abortion. How soon may I breed the mare?—Subscriber, Corona, Cal.

When all fetal membranes pass, as appears in this instance, and no discharge follows abortion, the mare may be bred on the ninth or eighteenth day according to the custom of breeding after foaling. Examine the food of this mare for molds, smut (ergot) or poisonous weeds.—F. G. M.

MAINTENANCE OF WIFE.

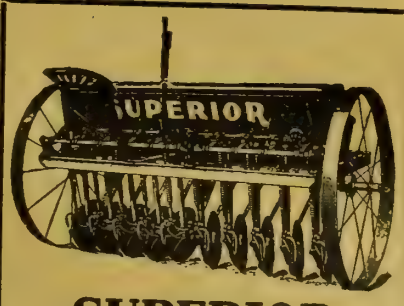
(Continued from Page 374.)

a limited period. If the mortgages are community property the court might divide them equally between the parties. If the husband provides reasonable maintenance, although it be very common and ordinary, I know of no manner in which she can have things fixed so as to insure getting her share, unless by agreement or through divorce proceedings, in case of desertion, or perhaps some other ground for divorce. The placing of a homestead on the real estate might be of some assistance. A boy becomes of age when he is twenty-one.—E. L. P.

Taking off honey is easy and simple with the right equipment, wrich includes inexpensive tools—a bee smoker, bee veil, chisel or knife for a hive tool or pry, and perhaps bee gloves or wristlets.

A thousand colonies of bees are used annually in the cucumber greenhouses of Massachusetts to carry fertilizing pollen. There are 2,100 persons in the state who keep bees.

Never at any time should honey be left open around the apiary, for it always leads to robbing.



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If your dealer does not handle them, write for information to

The H. C. Shaw Co.

Stockton, Cal.

MORE MONEY FOR BEETS.

Not content with the increase granted by the sugar manufacturers the growers are still insistent on a $5.50 price for fifteen per cent beets. Los Alamitos and Artesia growers met recently and adopted the following resolutions:

We, the Beet Growers of Artesia and Los Alamitos do hereby petition the central committee of the Beet Growers of Southern California to stand for an increase of at least one dollar per ton in the price of beets, for we feel that since we have a much larger amount of money invested, a much larger expense account and a much greater risk in the planting and growing of beets than do the factories in the production of sugar, that we are entitled to at least one-fourth of the protection afforded by the tariff for the development of the beet industry, and that if we are given such fair consideration we will render all the assistance in our power politically and otherwise so far as we can do so legally, for the development of the industry.

Mr. C. Dougherty of the Association writes:

"The beet industry of Southern California is assuming huge proportions and nearly all of the beets are raised in this valley that lies between Compton and Huntington Beach. Seven factories will draw on this territory next year, the one at Oxnard 3000 tons daily capacity; Chino 1000 tons daily capacity; Alamitos 1000 tons daily capacity; Huntington Beach 800 tons daily capacity; Santa Ana 600 tons daily capacity; Co-operative Factory, Irvine, 600 tons daily capacity; Anaheim, 600 tons daily capacity; total 7600 tons daily.

"These factories represent an investment of $5,000,000 or $6,000,000, and if run at full capacity will grind next year 760,000 tons of beets and make 2,200,000 sacks of sugar worth at present prices $15,000,000. Besides this, thousands of cattle will feed on the pulp and tops, adding considerable to the total of benefit from this great industry.

"To produce these beets the farmers will have over $30,000,000 invested in farms, horses and equipment. The beets here run very high in purity and sugar and the farmers are awakening to their importance in this great industry and organizing for mutual benefit and the development of the industry.'

We doubt not the growers will at least make known the justice of the position they are taking in this matter, and we trust they will be successful.

COTTON PLANTS PARTS.

The United States Department of Agriculture will soon issue Bulletin No. 222, Bureau of Plant Industry, entitled "Arrangement of Parts in the Cotton Plant."

The bulletin describes the plant, its peculiarities, its habits and the various parts. A number of interesting illustrations accompany the bulletin.

"The basis of scientific study of cotton," states the report, "as of agricultural plants, is the recognition and comparison of difference. Whether experiments are being made for the breeding of better varieties or to determine the most favorable conditions or methods of culture, account must first be taken of the differences that are shown in the character or behavior of the plants. Two principal kinds or classes of differences may be recognized in the study of such a plant as cotton. The component parts, such as the points, leaves, flowers or fruits, may differ, or there may be differences in the number or arrangement of parts that are otherwise alike. Changes of behavior that are of serious economic importance may be brought about by changing the number and arrangement of the parts of the plant."

A CHEAP PAINT.

For rough weather-beaten surfaces use 8 gallons crude petroleum or coal oil; 1 gallon linseed oil; 1 pint Japan varnish; 50 lbs. ochre or mineral. This quantity will cover 400 square yards with a durable water-proof coat.

Don't keep bees unless you mean to give them the proper care and attention.

For Sale—

Irrigated Alfalfa Land

Land with Water on It Now for

$27 an Acre

EASY TERMS

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In the Great Yaqui Valley, where your neighbors are the most successful farmers of California, Washington, Idaho, Oregon and Canada.

The rush to Mexico is on. The American farmer is beginning to realize that the only CHEAP land—that is, GOOD LAND—left on the American continent today is in MEXICO. IT'S THE LAST CHANCE. And the American farmer is taking advantage of it.

We have less than 5,000 ACRES of this land at this price, and it is going fast. Get it NOW while you can.

Land level as a floor—splendid irrigation system now in operation—railroad transportation — 15,000 acres now under cultivation, and American farmers behind the plows—wheat, barley, oats, corn, cotton, alfalfa, hogs.

Buy NOW—later on you'll pay more.

Chas. F. O'Brien

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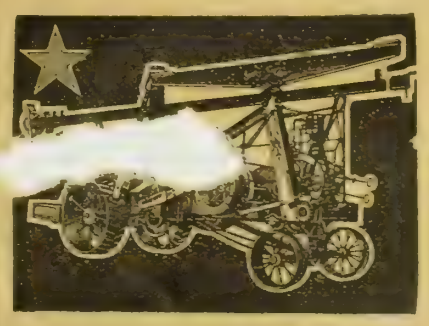

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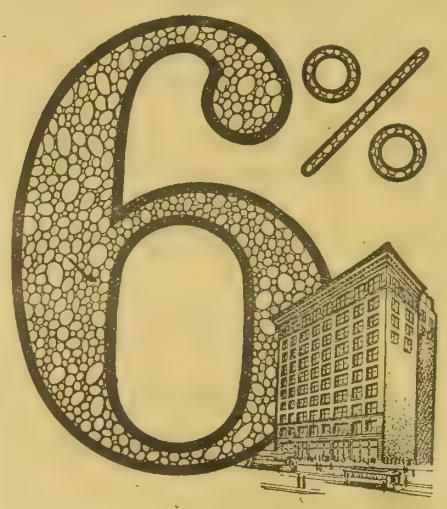

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Household Department

TAKE ANOTHER HOLD.

When your trouble has you nearly down,
And all the world seems one big frown,
Then grit your teeth, though friends may scold;
Breathe hard and catch a better hold.

Once you let up, you're gone, be sure!
Men worth their salt, grin and endure.
Up with your head—defiant, bold!
Reach higher for another hold.

S'pose things are bluer'n indigo;
And you're the only lad used so?
What though nine fail, where one succeeds?
"The tenth am I!" your lesson reads.

Then when you've fought your fight and won,
Don't "get too gay" with Fate—in fun;
But show some drooping soul, less bold
The way to catch a surer hold.

—W. P. Brown.

TROUBLE.

It was evident that the young man was worried. Indeed, it was so evident that Loretta could not well ignore the fact. So, after a few commonplaces, she asked him what was the matter.

"It isn't often that my friends are so evidently thinking of something else when I try my best to be entertaining," she said. "You have something on your mind, and it might be a good idea to tell me about it."

"I don't see how you guessed it," returned the young man. "But the truth is that I am just about as worried as anybody can be. I don't see how the thing can come out right."

"It may not be as bad as it seems," Loretta told him, comfortingly. "Girls overlook a good deal. Besides, a girl who takes the trouble to get angry at you is not often perfectly indifferent."

"You're right again—it is a girl," the young man said, sheepishly. "You see, we live in a neighborhood that is half city and half country, and not quite select enough to be fashionable. It's just as nice as it can be, and we certainly enjoy our garden and our porch to beat the band. My mother almost lives out of doors. Well, there was a house built next door, with a fine chicken yard, and by and by the people moved in."

"It's a way people have of doing," murmured Loretta.

"There was a man and his wife, and after a while a girl came home from college, having been graduated with honors. Gee, she's as smart as a whip! And, honest, it doesn't keep her from being pretty, either."

"I am really surprised," said Loretta.

"Well, somehow we got to be good friends," the young man went on dolefully. "Too good friends for my comfort, it seems. Anyhow, I got interested in her chickens—which are really fine ones, you know, not the common kind at all. I could understand how proud she was of them. She was fond of any kind of pets, and she had a cat that was a dream. It had a long, plumed tail, and had taken a prize at every cat show for several years. She positively worshiped that cat.

"After a while the mother's vegetables came up, and a lot of flowers, for she's a master hand at growing things. Then, just as ill luck would have it, something came and dug up her growing things. It certainly was the limit. Mother got so discouraged that I said I'd kill the creature that did it on sight, whatever it was."

"Reckless!"

"Well, I never thought of the chickens," he proceeded, "till I found Lida Flanders kind of chilly toward me. I asked her, over the fence, one morning, what the trouble was, and she said very pointedly that her most valuable chickens were disappearing at the rate of one a night. I didn't catch the drift of her remarks at first, but when she stepped upon a box and pointed to our lawn I understood. There was the head of her finest rooster! She reminded me that I had declared I would kill whatever it was that dug up our garden, and then she said that she could see I was a man of my word. It seems she had overheard what I said. Well, I didn't know what to say."

"Why didn't you tell her that you didn't know anything about her chickens?"

"Tell her!" repeated the young man. "As if I didn't tell her! If I said it once, I said it a thousand times. But do you think she would believe me, with that chicken's head lying at my feet? Not much! And you wouldn't have, either, not after my silly threat to kill whatever it was that tore up Mother's garden."

"What did you do about it after that?"

"At first I didn't think there was a thing I could do," he sighed. "Lida wouldn't let me come near enough to speak to her. It made me wild to see her smiling at everybody else."

"I wouldn't have given her a second thought, since she was so unjust."

"Oh, yes, you would," the young man assured her. "It would have been all very well to talk like that in the spring, but it was too late for me to quit thinking of her then. Why, I lay awake nights trying to fix it up, and it was not until last week that I had an idea.

"It was the very day she bowed to me as she was going out with young Saunders. You know, he squints or something. Well, bowing to me was more than she had done for so long that I sort of took heart and sharpened my wits. I had been so downhearted that I hadn't really tried before.

"As a result of that inspiration I made the finest trap you ever saw—neat, too, by Jove! It was sort of original, because I had to fit it against the side of the chicken house and make it large enough to squeeze a man's arm as well as kill a rat.

"I had it there two nights before it caught a thing, and then when I went to look at it before going down to the office I found it had worked. There was a cat in it, caught just as securely as you please, and dead as a door nail."

"Oh, how splendid!" Loretta cried. "That surely will please your fair neighbor."

The young man looked at her sorrowfully.

"Do you think so?" he asked. "You see, it was her cat!"—Chicago News.

RECIPES.

Russian Salad.

Take two cupfuls of cold boiled vegetables, peas, small string beans, diced carrots and a little cold boiled potato, and a few cooked Lima beans. Marinate in vinegar for half an hour, drain, dust with salt and pepper, and blend thoroughly with sufficient mayonnaise dressing to cover. Serve on lettuce leaves.

Rolled Oats Cookies.

Three cups rolled oats, one cup sugar, two cups flour. Rub one cup butter into the meal, flour, sugar and one level teaspoonful soda dissolved in 2½ cups warm water. Roll very thin and bake in a quick oven.

Washington Pie.

One egg, three-quarters of a cup of sugar, one tablespoon of butter, one and a quarter cups flour, three-quarters cup of milk, teaspoon cream tartar, one-half teaspoon soda. Bake in Washington pie tins. Filling: One cup milk, sweetened to taste, add one egg well beaten, heat to boiling point, add two teaspoons corn starch dissolved in a little water. After it has boiled up remove from fire. When ready to fill cake, spread, then slice two whole bananas, lay on cream, put a little more cream over them, then lay the cake on top. The bananas may be omitted. The top can be frosted if desired.

Cheese Cake.

Roll out some nice puff paste, not very thin, brush it over with cold

Loading carriers with asphalt at Trinidad Lake

Go to the bottom of the roofing question—if you want to save money on your roof.

Don't be caught by mere looks and mysterious terms. Find out what the roofing is made of.

And the time to find out is before you buy—it is often costly to find out afterward.

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is made of *natural* asphalt.

The difference between natural asphalt and manufactured or artificial "asphalts" is great. Natural Trinidad Lake asphalt contains natural oils which give it lasting life. They are sealed in Genasco and stay there to defend it permanently against rain, sun, wind, heat, and cold.

Artificial asphalts are residual products. Same way with coal tar. They are mixed with oils which makes them pliable for a while, but the oils evaporate quickly when exposed to sun and air; they leave the roofing lifeless, and it cracks and leaks.

When you get Genasco you can be sure of roofing that lasts. And roofing that lasts is the only kind worth having.

The Kant-leak Kleet is the lasting waterproof fastening for seams—prevents nail-leaks, and does away with unsightly cement.

Ask your dealer for either Genasco mineral or smooth surface roofings with Kant-leak Kleets packed in the roll. Fully guaranteed. Write for the Good Roof Guide Book and samples.

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water, spread it half over with grated cheese, then lap the other half over, and pass the rolling pin lightly over it. Cut into strips about four inches long and two wide. Bake in a quick oven.

TOMATO RELISH.

One peck ripe tomatoes. Peel, chop fine, drain over night. Two cups chopped celery, two cups sugar, two sweet peppers, one-third cup salt, one large onion, chopped or put through meat chopper, with the peppers, two ounces white mustard seed, one quart vinegar. No cooking; keep in self-sealers. Sometimes a jar will show a few bubbles. If so, pour into saucepan, put in a little sugar, let it get scalding hot and seal again, and you would never know it had been heated by the taste. The relish is nice on meat or fish, and some eat it on potatoes. The brown bread recipe by Miss Meeder was perfect.—One of your readers, Mentone.

GROOMING THE MOTOR CAR.

Although on all modern cars the lubrication of the motor is entirely automatic, the duty of the operator merely being to supply a sufficient quantity of lubricant, there are always a certain number of grease-cups which should be kept full and given a half-turn every day. These are to be found on the steering gear, the spring bolts, and sometimes on the water pump. It should be remembered that so long as grease is kept in, dust is kept out. From time to time it is advisable to lubricate the leaves of the car springs. It is a point which is generally neglected, yet if attended to twice a year, say at the beginning and at the end of the season, this will wonderfully improve the easy riding qualities of the car. The individual leaves of the springs are finely polished and carefully lubricated before being assembled, but after a certain length of time the oil is forced out, water gets in, allowing rust to form, and instead of the blades rubbing freely on one another they become almost a solid block. In order to apply the lubricant it is necessary to remove the clips holding the leaves together, and remove all weight from the springs by jacking up the chassis. The best position for the jack will depend on the construction of the car, but in all cases it will be found too low unless backed up with blocks of wood, and it should always be placed so that there is no danger of its slipping away. When all the weight has been taken off the springs the leaves will generally open freely, but if they should prove obstinate a little persuasion with the end of a screw-driver will separate them sufficiently to allow grease to be inserted on the blade of a knife. The best lubricant is a good quality of graphite grease.—W. F. Bradley, in Harper's Weekly.

ORIGIN OF CERTAIN NAMES.

Valley Forge; village in Chester County, Pa., so named because it is situated at the mouth of Valley Creek, where a forge was erected by Isaac Potts before the revolution.

Wheeling; city in Ohio County, W. Va., from the Indian, weal-ink, meaning "place of a human head," from the circumstances of the Indians having displayed the head of a white man on a pole at this point. Another authority gives whilink, "at the head of the river."

Yankee; this name with various suffixes forms the name of many places in the United States. The name is a corruption of the Massachusetts Indian pronunciation of the word "English" (Yengeese), and was bestowed upon the inhabitants of New England by the people of Virginia when they refused to aid them in a war with the Cherokees, it meaning to them "cowards." After the battle of Bunker Hill the people of New England, having established a reputation for bravery, accepted the name.—Bulletin 197, United States Geological Survey.

WHAT'S IN A NAME?

"Are you ever troubled with sleeplessness? I am. Some nights I don't sleep three hours."

"I pity you, then. I've got it awfully bad. I've been afflicted now for about two years. The doctor calls it neuris insomnia paralaxitis."

"I've had it about six months; but we call it a baby."

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Wood and coal were efficient enough in our forefathers' days when the modern methods were unknown, but with its ashes, dirt, labor and inconvenience it is no longer giving that state of comfort and refinement so much sought after by the modern home, to say nothing of its scarcity and enormous expense. Would you be interested in a proposition whereby you are saved one-half your present fuel bill and given all the conveniences of a city home? Our home-made gas system gives you this. There is no smoke, soot, odor, noise, danger, ashes, dirt, building fires nor carrying fuel. Gives you quick and unlimited heat, pleasure, efficiency, economy, and convenience, and in short improves your home immeasurably.

Absolute Guarantee—Each and every outfit is covered by a positive guarantee.

If you are looking for these advantages, write for further particulars at once. Let us tell you what we can do for you.

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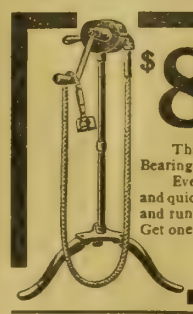

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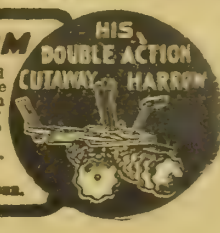

San Francisco-Los Angeles Produce Markets

Los Angeles Market

LOS ANGELES, Oct. 18, 1911.

Butter.

Butter has advanced 2½ cents during the week and a most firm condition prevails at this time.

Prices to trade 2½c in advance of the following Produce Exchange quotations:

Extras	30
Firsts	27½
Ladies	23
Country	20

Cheese.

Local Anchor	16
Oregon Daisy	16½
Northern Fresh	16
Domestic Swiss	18
Imported Swiss	32

Eggs and Poultry.

Good stock in eggs is very firm and all are quickly picked up at same prices as were quoted last week.

Paying prices f. o. b. Los Angeles are:

Local ranch, candled	44
Case count buying price	40
Eastern	32@34
Eastern storage	25@26
Pullets	26

Dealers pay for live poultry f. o. b.:

Hens, per lb	13@17
Roosters	8
Broilers	17
Fryers	14
Roasters	14
Turkeys	21
Ducks	12
Geese	12
Guinea hens, doz	4.00
Squabs, doz	1.75

Live Stock.

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs	7¼
Prime steers	6
Heifers	6
Calves, per lb	6½
Sheep, ewes, per head	4.75
Lambs, per head	3.75@4.25
Wethers	5.00@5.50

Potatoes.

Wholesale prices are:

Sweets, yellow, ctl	1.50@1.75
Highlands, ctl	1.50@1.75
Salinas	1.85@2.00

Onions.

Wholesale quotations:

Australian Brown, ctl	1.35
Silverskins, sack	1.75@1.85
Yellow Danvers, ctl	1.35
White Wax	1.50@1.60
Garlic	5@6

Vegetables.

Wholesale quotations:

Artichokes, northern, doz	90@1.10
Beets, doz bunches	25@30
Bell peppers, lb	4@5
Brussels Sprouts, lb	10
Beans, Limas	5@6
Beans, green and wax	6@7
Green chilis	3@5
Chilis, red	15@16
Cucumbers, lugs	50@60
Cabbage, sack	75@85
Cabbage, red, lb	3@3½
Cauliflower, doz	1.00@1.50
Celery, new, crate	1.50@1.75
Carrots, sack	90@1.00
Corn, lug	45@60
Egg plant	3@5
Horseradish, lb	13½
Onions, green, doz bunches	20@25
Kohl-rabi, doz bunches	40
Leks, doz	45@50
Lettuce, crate	90@1.10
Mushrooms, lb	50@1.00
Oyster plant, lb	15@20
Okra	6@8
Peas, lb	5@7
Parsnips, doz bunches	45
Parsley, doz bunches	25@30
Turnips, sack	90@1.00
Radishes, doz bunches	15@20
Rhubarb, Strawberry	1.00@1.25
Spinach, doz	15@20
Squash, summer	30@40
Spearmint, doz	25@30
Tomatoes, lug	50@60
Turnips, sack	1.00@1.25
Watercress, doz	35@40

Citrus Fruits.

Valencias	3.75@4.25
Grapefruit	2.75@4.50
Lemons	3.25@3.75
Limes, hundred	1.25

Fresh Fruits.

Wholesale prices on the market are:

Alligator Pears	1.25@1.50
Apples, Belleflowers	90@1.15
Apples, Spitzenbergs	1.75@2.00
Apples, Pearmains	1.25
Apples, Jonathans	1.90@2.35
Apples, Crab, lug	1.55
Bananas	4@4½
Casabas, crate	1.40@1.50
Cantaloupes, small	75@1.00
Cantaloupes, large	2.00@2.50
Figs, box	75@1.25
Grapes, Thompson Seedless, lb	3
Grapes, Black Hamburg, lug	65
Grapes, Muscats	75@1.15
Grapes, Tokays	85@1.25
Loganberries	6@8
Peaches, lug	60@1.00
Pineapples	8@10
Quinces, lug	85@1.00
Pomegranates, lug	1.25
Plums, Clymans, lug	1.50
Plums, Tragedy	1.50
Pears, Bartlett, box	2.50
Blackberries	8@9
Raspberries	10@12
Strawberries	5@10
Watermelons, lb	¾@1

Dried Fruits.

Wholesale prices to retailers are:

Evaporated Apples, fancy, lb	12@12½
Apricots	16@17
Figs, box	80@1.75
Peaches	11@12½
Nectarines	12
Pears	12@13
Prunes	8½@14
Plums	16

Beans Dried.

Wholesale quotations:

Limas	5.50
Black eyes	4.50@5.00
Pinks	4.25@4.50
Lady Washington	4.25@4.40
Small white	4.25@4.50
Garvanzas	4.50
Bayous	4.50@5.00
Lentils	6.00@7.00
Mexican Reds	4.75@5.00

Nuts.

Wholesale quotations:

No. 1 soft shell walnuts	14
No. 1 H. S. walnuts	13½
No. 2 walnuts	11
Almonds, IXL, lb	19@20
Pecans, polished	15@17
Peanuts, Eastern	8
Peanuts, California	6
Pine Nuts	18

Honey.

Wholesale quotations:

Extracted water white	8½
Extracted light amber	7½
Comb water white	16@17
Light amber	13@14
Beeswax	30

Hay.

Buying prices f. o. b. cars Los Angeles are:

Barley hay	13.00@14.00
Wheat hay	13.00@14.00
Tame oats	15.00@17.00
Alfalfa	13.50@14.50

Grain.

Wholesale selling price f. o. b. Los Angeles:

Wheat, new, cental	1.75@1.80
Corn	1.70@1.95
Kaffir	1.80
Millet	3.75
Popcorn	4.75@5.00
Egyptian corn	1.75
Red oats	1.85
Seed barley	1.50
Milo	1.95

Feed Stuff

Wholesale selling price f. o. b. Los Angeles:

Alfalfa meal	1.15
Beef scrap	3.00
Bone meal	2.05
Charcoal	2.00
Cracked corn	2.00
Cracked wheat	1.90
Shorts	1.95
Bran	1.70
Oil cake meal	2.60
Feed meal	2.05
Rolled barley	1.85
Middlings	1.85

San Francisco Market

SAN FRANCISCO, Oct. 17, 1911.

Butter.

Butter advanced to 30 cents during the last of the week, then lost a point on Monday, and still stands a half cent above last quotations.

Prices to trade 2½c in advance of the following Produce Exchange quotations:

California extras, lb	29½
Prime firsts	27
Firsts	26
Seconds	23

Cheese.

Cal. flats	12@14½
Cal. Y. America, fy, new	15@16
Oregon, fancy	13½

Eggs and Poultry.

Eggs are very firm with strong advance noted on extra stock. Other grades are quoted as last week.

Official quotations of the San Francisco Wholesale Dairy and Produce Exchange are:

Fresh ranch extras	45
Firsts	39
Seconds	21
Eastern seconds	17
Select pullets	33½
Hens	3.50@9.00
Fryers, dozen	4.50@5.00
Ducks	4.00@7.00
Broilers	3.00@4.00
Roosters, doz	4.00@9.00
Geese	2.00@2.50
Goslings, pr	2.00@2.25
Pigeons	1.50@2.00
Turkeys	24@27
Squabs	2.00@2.50

Live Stock.

San Francisco prices, gross weight:

Steers	4@5¾
Cows and heifers	3@4½
Calves, lb.	5@6¾
Hogs	6¾@7
Wethers No. 1	3¾@4
Milk lambs	4¾
Ewes, No. 1	3¼@3½

Potatoes.

Wholesale market quotations:

River whites, ctl	90@1.10
Alamedas	1.50@1.75
Sweets, ctl	1.60@1.75

Onions.

Yellow, new	60@75
Garlic, new, lb	3@4

Vegetables.

Wholesale quotations:

Asparagus, box	1.00@1.75
Beans, string	2@4
Beans, wax	1½@2½
Limas	3@5
Bell peppers, box	75@1.00
Cabbage, ctl	75@85
Cauliflower, doz	50@60
Carrots	70@75
Cucumbers, box	50@1.00
Corn, sack	50@1.25
Chili peppers, box	35@90
Celery, crate	1.50@2.50
Egg plant, box	35@60
Lettuce, crate	75@2.00
Okra, box	50@85
Peas, sack	1.75@2.00
Hubbard squash, sack	50@75
Summer squash, lug	75@1.00
Squash, Marrowfat	50@65
Tomatoes, box	25@50
Turnips	60@75

Citrus Fruits.

Valencias	3.25@4.50
Grapefruit	3.00@4.50
Lemons	1.50@5.50
Limes, Mexican	4.50@5.00

Fresh Fruits.

Apples, Bellefleurs	75@1.00
Apples, Newtons	1.00@1.35
Cantaloupes standard	40@1.40
Nutmegs, large, crate	35@75
Figs, layer, single	25@60
Grapes, Thompson Seed., crate	40@50
Grapes, blk	40@50
Grapes, Muscat, box	40@50
Grapes, Tokay	40@50
Pears, Bartlett, box	75@2.00
Peaches, box	40@1.25
Plums, box	40@60
Prunes, box	75@85
Quinces, box	50@75
Loganberries, chest	4.00@6.00
Blackberries, chest	5.00@6.00
Raspberries, chest	4.00@8.00
Strawberries	3.00@5.00
Pineapples, Hawaiian	2.00@3.50
Bananas	1.00@1.50
Watermelons, doz	1.25@2.00

Dried Fruits.

FRUITS—1911 crop, f. o.b., carload lots, per lb.—Apples, 8½@10c; Apricots, 14@17c; Peaches, 9¼@11c; Prunes, bulk basis, 5¾@7c; per lb., 4¾@10c, with a premium of ½@1c on large sizes; Figs, 4¾@6c for White; Pears, 9½@12½c.

RAISINS—1911 crop: Seeded, per pkg.—Fancy, No. 16, 7c; Choice, No. 16, 6¾c; Loose Muscatels, in 50-lb. boxes—Standard, 4-crown, 6¼c; 3-crown, 5½c; 2-crown, 5c; Seedless Muscatels, 5¼@5½c; Sultanas, 6@6¼c; Thompson's, 7@7½c.

Nuts.

Walnuts, No. 1 soft shell	14
Walnuts, No. 1 hard shell	13½
Almonds, '10, N P U	16@16½
Almonds, '10, Nonp	18@18¾
Almonds, '10, I X L	16½@17¼
Pecans	14@17
Chestnuts, California	6@8
Peanuts	5@5½

Beans Dried.

Limas	5.00@5.20
Pink	3.50@3.60
Black eyes	3.50@3.60
Small white	3.80@3.85
Large white	3.65@3.80
Kidneys	4.50@4.60
Garbanzos	3.00@3.25
Bayou	3.40@3.65
Horse beans	2.75@3.00
Red Mexicans	4.50@4.60
Cranberry	3.30@3.75

Hops

Hops, coast, 1910	30@34
Hops, 1911	35@38
Hops, Oregon, 1911	35@38

Honey.

Water white, comb, '11	15
Dark comb	12½
Extracted white, '11	9@10
Extracted dark	6½
Beeswax, lb	24@30

Hay.

Scott, Magner & Miller say:

Receipts of hay this week have only amounted to 2500 tons; this is an immense decrease from the large amounts that we have been receiving here regularly for some time past. A large part of the arrivals recently have consisted of alfalfa coming by water.

The consumers in San Francisco and Oakland have laid away considerable hay for winter use, and they are now drawing upon these stored lots. There is a little lull in the market which we always expect in the month of October, and this October is no exception to the general rule.

Fancy hay, both of wheat in lightweight bales, and of red oat hay, sell at our top quotations, but very little has been coming in.

The shipping trade has been rather moderate recently both for coastwise demand and also for export to the islands.

Alfalfa has continued to arrive in large lots and the market on this article has remained practically unchanged. If the weather continues good there will be still large shipments coming into the market from the river districts, and it is not thought that any change in the situation would take place if these conditions prevail.

We quote the wholesale prices in round lots on today's market as follows, viz:

Fancy wheat hay	19.00@20.00
No. 1 wheat or wheat & oat	16.50@17.50
No. 2 wheat or wheat & Oat	13.00@14.00
Choice tame	15.00@16.00
Other tame oat	10.00@13.00
Wild oats	10.00@12.50
Stock hay	5.50@6.00
Alfalfa	9.00@11.00
Straw, bale	60@70

Grain.

Wheat	1.47½@1.50
Barley, fancy	1.71¼@1.72½
Barley, good to choice	1.67½@1.70
Barley, poor to fair	1.57½@1.65
Corn	1.60@1.62
Oats, red	1.70@1.75
Rye	1.47½@1.52½
Mustard, brown	5½
Alfalfa seed	18
Millet	3@3½
Flaxseed	5@5½
Broom corn seed, ton	30.00

Feed Stuff

Alfalfa meal	16.00@17.00
Bran, ton	28.00@29.00
Feed cornmeal, ton	38.00@39.00
Cracked corn	38.00@39.00
Rolled barley, ton	34.50@36.50
Rolled oats, ton	31.00@32.00
Middlings	32.00@34.00
Oilcake meal	42.00@43.50
Cocoanut cake, ton	24.00@25.00
Mixed feed, ton	25.00@27.00
Shorts	29.00@30.00

Deciduous Fruit Market

F. B. McKevitt, general manager, California Fruit Distributors, reports:

SACRAMENTO, Oct. 14, 1911.—The following gives the number of cars of deciduous fruit shipped from all points in California for the week (seven days) ending Friday morning, October 13, 1911:

Peaches—16½ cars. A few peaches are still offering, but the quantitiy is inconsiderable, and there will probably be no more of them after the following week.

Plums—The movement of this fruit has now entirely ceased and will no longer be quoted.

Pears—50¾ cars. Fall and winter pears continue to go forward in satisfactory volume. The actual movement for the week has been swelled by belated reports of previous shipments which have not come to us until this week. There are not many cars of this fruit now left, probably not more than twenty-five or thirty.

Grapes—518¾ cars. Grape movement continues about stationary and probably will remain at about this figure during the remainder of the season. It is reported that there are not many Tokays left in the Lodi district, but there are plentiful supplies yet to be shipped from the American River and from other sections. 'Cornichons are going forward in increased volume, but there will be no large supplies until after Tokays are exhausted. Emperors have not begun to move yet.

The weather continues fine and is in every way favorable to the proper handling of the crop.

Comparative statement of shipments, October 7, 1911:

	1910	1911
Cherries	250½	216¼
Apricots	289¾	214½
Peaches	2517¾	2004½
Plums	1552½	1364¼
Pears	2345	2216
Grapes	3670½	3608¼
Sundry	14	11
Total	10,640	9634¾

Citrus Fruit Market

LOS ANGELES, Oct. 18, 1911.

Valencias are closing the season most satisfactorily. In every market the prices have advanced slightly or at least a very firm condition prevails. Good stock will readily command from $3.25 to $3.50 and some extra good stock will go as high as $3.75 f. o. b. California points.

The lemon market continues to improve in general tone, $5.00 and $6.00 being readily commanded by fair stock. Practically no foreigns are coming at this time and were it not for California stock fabulous prices would obtain for the few which come.

Shipments.

Shipments of oranges to date since November 1, 1910, 36,586 cars, lemons 6,583, total 43,169. To same date last season: Oranges 25,173 cars, lemons 4,644, total 29,817.

NEW YORK, Oct. 16.—Seven cars Valencias, one lemons sold. Market firm on oranges, higher on lemons. Weather fair and warm.

VALENCIAS—	Avge.
Shamrock, fy, Placentia M. O. A.	$5.60
Caledonia, xc, Placentia M. O. A.	4.95
Albion, ch, Placentia M. O. A.	4.55
Cambria, sd, Placentia M. O. A.	3.85
Old Mission, fy, Chapman	6.40
Old Mission, ch, Chapman	5.55
Golden Eagle, sd, Chapman	4.90

Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 225-227-229-231 East Sixth Street, Los Angeles.

Do your cows milk hard? Send 50 cents for teat expander. O. J. Weber Co., 225-227-229-231 East Sixth St., Los Angeles, Cal.

Cream Separators, all sizes and prices. O. J. Weber Co., 225-227-229-231 East Sixth Street, Los Angeles.

Lady Rowena, Chapman	4.30
Scepter, S. S. Ex.	5.95
Rooster, S. S. Ex.	5.00
Alps, A. C. G., Glendora	5.15
Home, A. C. G. Ex.	3.65
Pointer, A. C. G. Ex.	3.75
Hunter, A. C. G. Ex.	3.05
Golden Cross, O. K. Ex.	5.10
Red X, O. K. Ex.	4.55
Pet, S. A. Ex.	4.90
Tustin Gem, fy, Tustin P. Co.	4.75
Old Oak, ch, Tustin P. Co.	4.50
LEMONS—	
Excellent	$6.35
Sunshine	6.10

BOSTON, Oct. 16.—Three cars sold. Weather cool and cloudy. Market active and higher.

VALENCIAS—	Avge.
Alta Cresta, A. H. Ex., Pachappa	$6.05
Robusta, marked L. Pachappa	5.40
Hobo, marked L. A. H. Pachappa	4.45
Standard, sd, Nat. O. Co.	5.00
Robusta, A. H. Pachappa	5.45
Hobo, A. H. Pachappa	5.00
Orchard, or, Nat. O. Co.	5.60
LEMONS—	
Pet, S. A. Ex.	$5.95

PHILADELPHIA, Oct. 16.—One car Valencias sold.

VALENCIAS—	Avge.
Alps, A. C. G., Glendora	$5.50
Hunter, A. C. G. Ex., Glendora	3.40
Home, A. C. G. Ex., Glendora	4.25

PITTSBURGH, Oct. 16.—Two cars sold. Market very strong on both oranges and lemons. Weather cool.

VALENCIAS—	Avge.
Lotengo, fy, Sparr Ft. Co.	$5.10
Pointer, A. C. G., Azusa	4.25
Circus, xc, Sparr Ft. Co.	2.90
Hunter, A. C. G., Azusa	4.05
LEMONS—	
Lotengo, fy, Sparr Ft. Co.	5.45
Senorita, sd, Sparr Ft. Co.	3.50
Circus, xc, Sparr Ft. Co.	4.35

CLEVELAND, Oct. 16.—Two cars sold. Market firm on good quality fruit. Weather cool and pleasant.

VALENCIAS—	Avge.
Pointer, A. C. G. Ex., Charter Oak	$4.70
Hunter, A. C. G., Charter Oak	4.30
LEMONS—	
Palm Tree, A. H. Ex., Prenda	$4.80
Commercial, A. H. Ex., Prenda	4.00

CINCINNATI, Oct. 16.—Market steady: Weather warm.

VALENCIAS—	Avge.
El Capitan, S. A. Ex.	$3.75

ST. LOUIS, Oct. 16.—Three cars sold. Weather favorable. Market stronger.

VALENCIAS—	Avge.
Searchlight, S. S. Ex., Orange	$4.65
Wildflower, ch, Randolph Ft. Co.	3.05
S. S., S. S. Ex., Orange	3.90
LEMONS—	
Bridal Veil, V. C. Ex., Haines Spur	$4.75
White Cross, V. C., Haines Spur	4.45

This year's bean crop at Somis, Ventura County, is heavier than last year's.

SAVING WITH THE SILO.

Noting that the champion car lot of Herefords at the International was fed on ensilage, a North Dakota farmer states that all kinds of stock on the farm will eat it greedily and thrive upon it. He built his silo on a 3-foot foundation made of stone and cement and so constructed that the foundation was cup shaped on the cement surface with a depression two feet deep. This catches the moisture and when mixed with alfalfa leaves or bran makes a fine feed for young stock. He says:

"My silo made it possible for me to sell $700 worth of hay, and the silo was filled from about 15 acres. My stock did as well or better than if I had fed them the hay. If five farmers would each build a silo and together buy an ensilage cutter, they would materially lessen the investment and then, by exchanging work at filling time, they could lessen the expense. But my advice is, build a silo because it has demonstrated beyond a doubt that it is the best and cheapest of feed and will make your dairy or stock business a pleasure, furnishing feed without robbing your soil."

WORMS IN SWINE.

Pneumonia, lung fever and worms in swine are often mistaken for cholera. Wormy hogs are a positive damage and injury to farmers and stock raisers who own them and are trying to make pork raising pay. They are not only hard and expensive to care for when they are troubled by the disgusting parasites in their intestines, but they are very liable to have other diseases which invariably prove fatal. If they have lung fever and worms at the same time, they will hardly recover.—Kansas Farmer.

A GOOD WINNING

At the Fresno County Fair the American Pump won two first prizes—one for centrifugal pumps and the other for deep well pumps. Considering the competition met this is an excellent showing. The judging was absolutely unbiased and the winning was made on merits.

The company has recently issued a new bulletin which may be had free by writing the California Hydraulic Engineering & Supply Co., 70 Fremont street, San Francisco.

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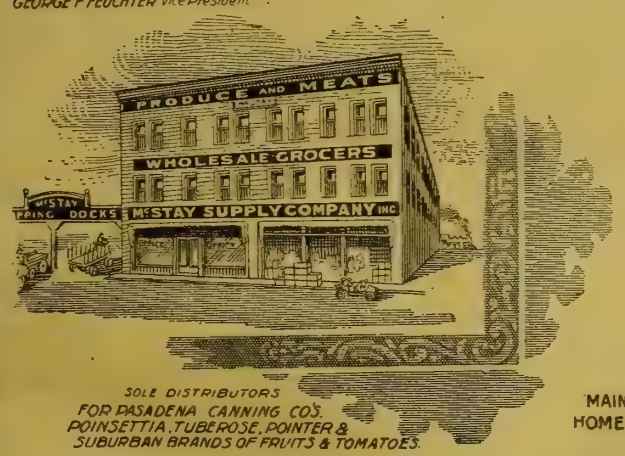

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We guarantee absolute satisfaction on your part, of any purchase you may make of us. By this we mean that if you are dissatisfied with anything bought from us, for any reason whatever, we agree to refund the purchase price on return of the goods, in addition to paying freight charges both ways.

McSTAY SUPPLY CO.

P. S.—Our guarantee is short and to the point; it could not be made stronger or more binding if it contained a thousand words drawn up by a Philadelphia lawyer. Experience has taught us that most people are honest, and we therefore have no fear of being imposed upon by the absoluteness of our guarantee. All we ask of a customer, should he for any reason be dissatisfied, is that he first get instructions from us as to disposition or return of merchandise.

Freight Rates

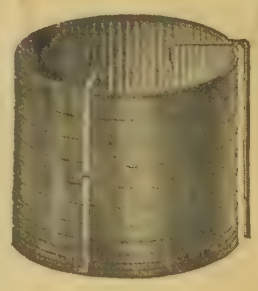
REMEMBER THIS

You pay not one cent more for freight than does the largest corporation or dealer for the same amount of goods.

Remember Also—That your freight rate is exactly the same on one, two or three hundred pounds, as that of your local merchant on one, five or ten thousand pounds.

Therefore — Our prices to you saves you the retailer's profit.

What is the Difference between the dealer sending his money to Los Angeles for his goods and putting the profit in his own pocket and you sending your money to McCtay and putting the profit in your own pocket?



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SUCCEEDING

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Tanks for Water, Oil, Wine, Mining and Cyanide

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Machine Banded Pipe, 2 in. to 24 in. Made up ready to lay. Continuous Stave Pipe 12 in. to 12 ft. shipped knocked down. Qnality of material unaffected by change of firm name. We can fill your orders better than ever. New pipe catalog in preparation. Place your name on our mailing list and receive valuable information free. Send for tank catalog.

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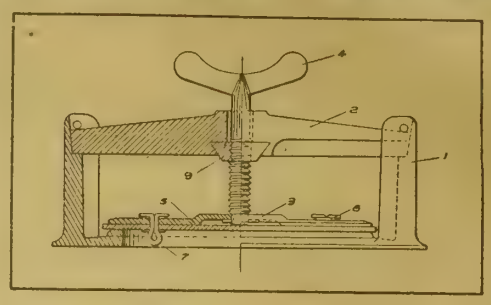
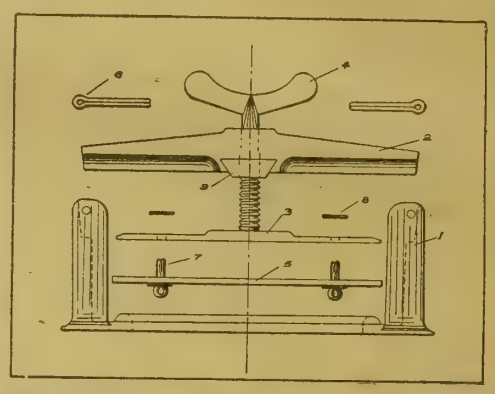
POMONA CIRCULAR VALVE





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The Pomona Valve is constructed with non-corrosive parts, thus insuring a workable valve regardless of infrequent use. All fastening held in place by cotter pins, thereby making a very cheaply constructed valve and yet a very substantial one.

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2 Cross Bar 6 Cotter Pin
3 Top or Lid 7 Cotter Pin
4 Brass Thumb Screw 8 Cotter Pin Washer
9 Brass Nut

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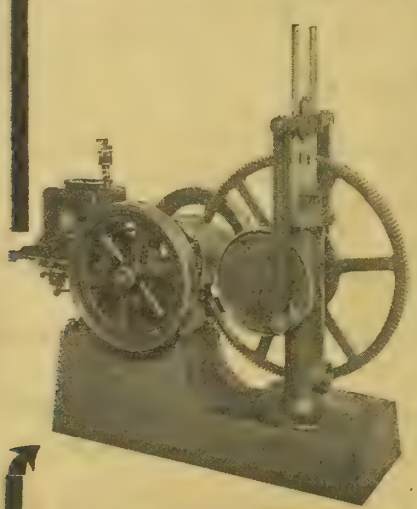
POMONA, CALIFORNIA

Have You Seen **Gregory's Triumph Engine**



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Then it must be one that is designed expressly to meet your requirements, every part proven by time and service in other plants to be perfectly adapted to do the work it will have to do in yours.

This company is not committed to any one type or system of pumping, but we know the pumps that have given satisfaction and what their working conditions must be, and by means of this knowledge, can take your case, consider all its phases, then outline a plant that we know is bound to absolutely meet your requirements.

Our price will be either f. o. b. Los Angeles, or as we would prefer, installed complete at your well and in perfect running order and doing just what we have told you it would do.

Write us your conditions fully or ask us to send you a card to be filled out. We will quote you a price, a good one, and remember it will cover a plant that you can depend upon.

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Water Well Dept.

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LOS ANGELES

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The Original R. I. Knapp Side-Hill Plow

Orchard and Vineyard Plow received first premium at State Fair.

If you cannot get our plow send us the name of your dealer and we will see that you are supplied. Has given entire satisfaction for over thirty years. Equally as good for valley as hill sides. We manufacture five sizes—from one-horse orchard and vineyard plow, to the strongest grading plow.

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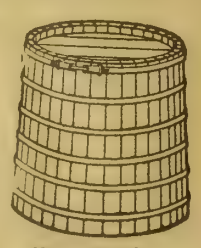
Wine Tank



Water Tank

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The continual cleaning-out of weedy ditches is but one of the disagreeable and expensive features of the old-style Irrigation Methods.

Why waste time and money in this way, or in costly experimenting, when the experience and advice of Irrigation Experts is yours for the asking.

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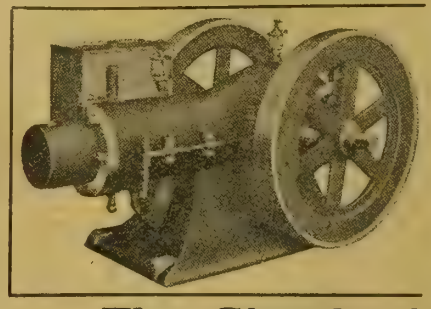

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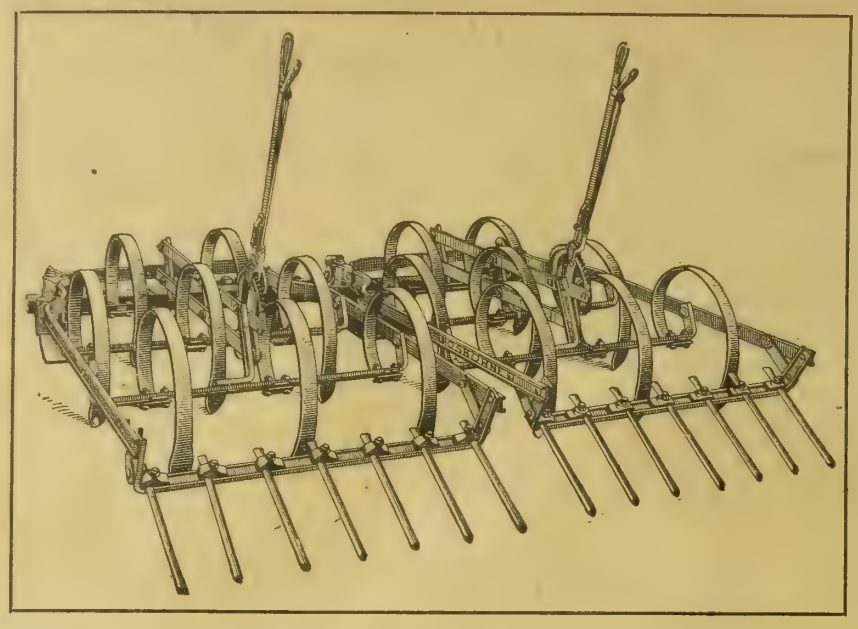
CALIFORNIA CULTIVATOR

An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch.

LOS ANGELES OCTOBER 26, 1911 SAN FRANCISCO

Land and Water Brought Together



The Osborne Combination Spring Tooth Harrow

A glance will show the advantage of using this harrow.

It is a Spring Tooth and a Peg Tooth in One Unit.

The trailing teeth in the rear smooth the ground and break up the clods while they are fresh and leave the ground in fine condition. Costs a little more than old style harrows but several hundred users have learned that it is worth it. Made in 8, 16 and 24 tooth.

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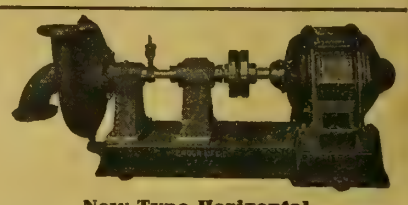
New Type Vertical Pump

Does It Not Seem Reasonable



New Type Horizontal

To Assume That a Company

which has been manufacturing one line of goods for over thirty years must be in a better position to furnish superior goods than one which has been in business a few months or years? The old concern has experienced engineers, superior shop facilities and, above all, a reputation and standing to maintain.

Krogh Pumps Have Been Built for 33 Years
Our New Bulletin, C-12, tells about them.

Krogh Manufacturing Company

Our Branch House, 206 N. Los Angeles St., Los Angeles, carries a complete stock

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For the Peach Pests, Use Ortho Spray

Lime-Sulphur

Satisfaction or Money Back. Address Ortho Sprays, Watsonville, Cal.

THE LAND'S FULL YIELD.

Seed for Alfalfa is a small item in dollars and cents, but the difference in crops is the difference between success and failure, depending upon the selection of seed.

The weevil trouble in certain seed-growing sections is known to all experts, but our buyers have avoided all possible complaint by purchasing a stock of

ARIZONA ALFALFA SEED

This seed is triple cleaned and comes from a hardy, small-stemmed, full-foliaged stand. It is dodder free and altogether as fine a lot of seed as we ever handled. Write for prices.

A FIFTY PER CENT. LARGER TONNAGE of Alfalfa can be grown by inoculating with **"Farmogerm"** at a cost of only $2.00 per acre. No progressive farmer should miss reading our Farmogerm booklet—mailed free.

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SUGAR and CATTLE

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The land has an abundance of water in a district where irrigation, drought and frosts are unknown. Large tame grass pastures have just been prepared.

The land is free from incumbrances, which affords our investors the highest degree of security.

THE PRODUCTS OF THE RANCH ARE CATTLE AND CANE SUGAR, TWO OF THE WORLD'S BIGGEST DIVIDEND PAYERS, AND ON WHICH THE MARKET IS STEADILY ADVANCING.

In this district lean cattle fatten in four months in tame grass pastures and increase 50% to 100% in value.

Cane sugar is manufactured at one-third the cost of beet sugar.

Additional capital is required for improvements and to buy cattle to stock the ranch. A limited amount of investment certificates will be issued in units of $100 cash or on installments. Six per cent per annum interest is guaranteed, and we also share the profits with you. Option given to withdraw your money and profits or to become a part owner of this great property.

Applications for certificates will be filed in the order received. This enterprise is backed by some of the most substantial and well-known business men of Los Angeles. We invite the strictest investigation.

Send for free booklets and descriptive literature.

C. E. Reed, Secretary

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NITRATE OF SODA

We are prepared to furnish Nitrate of Soda at the lowest market price, and will be pleased to quote prices and furnish literature to any one interested, on application. Advise us what crops you are interested in.

NITRATE AGENCIES COMPANY
W. S. SPARR, Agent, 321 Stimson Block, Los Angeles

California Cultivator

Vol. XXXVII. No. 17. LOS ANGELES: THURSDAY, OCTOBER 26, 1911 One Dollar the Year

Conserving Enthusiasm in Sacramento Valley

Methods of Work by a Most Progressive Company. Prizes for the Best Kept Farms. Photos on the Cover Show the Wealth of Soil and Water.

"The West was ages old before the East was discovered! The seer says that if Columbus had come first to the Western Coast New England would today still be an uninhabitable, howling wilderness." This is a statement made by Barbara Worth to a young New York civil engineer who had come to aid in reclaiming the desert along the Colorado river, as described in the story, "The Winning of Barbara Worth," by Howard Bell Wright. It is an excellent novel of California life and conditions—but this is not a review of the book, and the above is only made to call attention to California conditions. The book in question touched upon the great Imperial Valley—although it is there referred to under another name—and the methods of bringing there the people who would make a garden of what had before been a perfect wilderness. But the wonderful results of California sunshine, soil and water, combined with intelligence we believe have justified the truth of the seer's words. Why one should ever emigrate from the Pacific Coast to try and reclaim the barren hillsides of New England today would be hard to understand.

This story of the reclamation of the desert is intensely interesting, especially to Californians who have seen the wonderful results of efforts at reclamation all over the state. Many of these have been vastly different from the reclamation of "La Palma de los Manos de Dios," in that instead of being forbidding desert, rich delta lands and fertile plains have been developed to greater productiveness.

A Great Concern.

This is true of the great plains of the Sacramento Valley; for years that has been the great wheat growing section of the state, but we note in the last reports from the Bureau of the Census a tremendous decrease in wheat production. In the decade between 1899 and 1909 wheat decreased in this state over 2,205,188 acres, or 82.2 per cent. At first look it may appear that this is to the discredit of the state, and in a sense it may be caused by poor farming methods of the wheat producers, but the greater decrease is because the wheat lands are being taken to produce fruits and nuts and the more intensive farmed crops. For example, one particular section of the valley, Colusa and Glenn counties, is being brought under more intensive cultivation by one of the largest financial concerns in the United States, the J. S. and W. S. Kuhn Syndicate of Pittsburg, which has secured great holdings in those two counties covering 125,000 to 150,000 acres. Water is secured from the Sacramento river and conducted in great canals over the land. These lands are now being sold to small holders and many enthusiastic small farmers are today beginning to see the rewards of their pioneering.

There are some places under the system which are seven or eight years old, but these were started before the Kuhn Company or, more properly, the Sacramento Valley Irrigation Company, took charge of the development. This company has been engaged in this work for a matter of three years, though less than two will cover the period of its most active work. It is finding the work somewhat embarrassing because of the "good business" principles which inspired its predecessor who "attempted" to develop these lands. This "good business" is fully illustrated in the book above referred to in describing the cheap and unsatisfactory system which was installed because of lesser cost. The point with the investors in the story was to get greatest returns for least expenditure with the emphasis placed on least expenditure. The present company in charge of these lands follows an entirely different plan; it plans for future as well as present returns. The headings and outlet gates are of reinforced concrete, inverted concrete syphons carry the water under roads, no wooden construction being permitted anywhere.

Sugar Factory at Hamilton, Glenn County.

Conservation.

In a few moments' conversation with Mr. D. B. Ross, the manager, he said that the greatest effort of the company at this time is conservation of enthusiasm of the settlers. The easterner comes to California induced by stories of the wonderful productiveness of the soil, and beautifully colored literature, with the feeling that rich returns are secured with minimum effort. In reality it requires greater effort to secure results than in eastern agriculture, but corresponding greater returns more than compensate. The easterner not understanding this, after the first flush of enthusiasm subsides, becomes discouraged and goes "back home."

One of the steps in this conservation of enthusiasm has been the creating of an agricultural department in charge of one of the best educated agriculturists in this country. This department will give to settlers an outline of the best method of proceeding with the new ranch, lay contour lines, give chart showing grades, advise best plans for laying ditches for irrigation, landscape the grounds about the house, give information as to the vegetable garden, and as to livestock best adapted to the section; in fact, any question the settler may wish to ask will be answered. Mr. W. S. Guilford is in charge of this department. The engineering staff, under E. D. Woodruff of the company, is at his disposal to assist in planning irrigating ditches for each orchard ranch. Mr. Shouse has charge of the gardening department, one of the newer features of the service. The settlers show their appreciation of this service by making fullest use of it. The gardening department, both vegetable and landscape, has as yet been little called upon. Another season will, however, show its usefulness, to a greater extent.

Best Farm.

Another factor in enthusiasm conservation installed by the company is the offering of a series of prizes for the best planned and the best kept farms. This feature was first taken up last year with the offer of a pure-bred Holstein cow, but the company went one better than its promise and in addition awarded to the owner of the second best ranch which showed most careful preparation for irrigation, a fine Holstein heifer.

The interest in this contest inspired others to greater effort for this year's winnings. Instead of being content with offering one prize, the company offered eleven in a series of five contests. The first of these was for the best general farm, three prizes being offered; first, registered Holstein-Friesian cow; second, three registered hogs; third, 25 pure-bred chickens. The next class was best farm in first year's development: first prize in this was a Jersey heifer; second, pair of registered pigs. The next class was best first year orchard; first prize winner getting nursery stock to the value of $25, second taking a $15 bunch of stock. The best first year stand of alfalfa of five acres or more was the next class, mower and rake constituting the prizes. The best preparatory work for alfalfa, five acres or more, won 100 pounds of seed, second best, a two-horse Fresno scraper.

To judge who were the winners of the thirty contestants, Prof. E. J. Wickson of the State University and the writer were chosen and accompanying the judges were two auto loads of people interested in this particular phase of the work which is peculiar to this valley and company. In the machines were Mr. D. B. Ross, general manager of the irrigation company; W. S. Guilford, agriculturist; Mr. R. E. Shouse, landscape architect; Mr. Griswold, photographer and publicity man, and Mr. D. B. Macoun, assistant superin-

(Continued on Page 408.)

Citrus Trees Exclusively

Now is the best time to place your order for spring planting. Get same in while the first-class stock is available and avoid being disappointed later on.

Write Us Today

Our booklet, "CITRUS FRUITS," mailed to any address on receipt of 25c.

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San Dimas, Cal.

WARNING

To the Orange Grower

Insist on using only

Sulphuric Acid

made from Pure Virgin Sulphur when your trees are fumigated.

Acids made from waste fumes of the smelters contain arsenic, lead, copper and nitrous fumes, which are exceedingly dangerous to your trees, and may cause you no end of trouble.

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Successors to Braun Chemical Co.

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We Raise other varieties of Citrus Stock but our

Eureka Lemon Trees are our Specialty

Before placing your 1912 spring order write to, phone, or visit

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Citrus and Tropical Fruits

BENEFIT AMERICAN PRODUCERS.

By Special Contributor.

The farmer and fruitgrower is likely to feel that he is too often discriminated against by the railroads, by the tariff, by the commission men, by almost every one with whom he comes into contact. He has so long been pictured as a "rube" who readily buys green goods and gold bricks that he is tempted to think, at times, that even Uncle Sam looks on him in that light. For years the farmers have been asking for the same measure of protection in the tariff that has been accorded freely to the laboring man and the manufacturer. Has he got it? Not always. Occasionally the man who tills the soil has got something but it has been hard won, and no sooner did he get it than powerful forces were arrayed to snatch it away from him.

Take a concrete case. In Florida and California the climate was found to be suitable for growing oranges and lemons. Enterprising pioneers in both states took up the new lines with enthusiasm. They met with many discouragements and setbacks. There were insect pests, frosts, droughts, scarcity and high cost of labor, unknown problems to solve, years to wait for returns, and competition from foreign lands when other problems had all been reduced and success achieved. Orange growing reached a stage where the home growers controlled the market, and competition was little feared. Lemon growing continued to be a hard fight although the problem of producing a better lemon than the imported had been solved and 50 per cent of the home market was supplied by home-grown lemons. The extension of the market was checked because the importers, with cheap home labor and cheap ocean freights, could, and did, keep the American fruit from reaching the seaboard whenever they wished to do so. Congress wanted to give the American growers an even break, and added one-half cent per pound to the tariff on lemons, or about one and one-third cents a dozen, one-eighth of a cent on each lemon. During the hottest portion of the summer lemons sold in Washington at 10 and 20 cents a dozen. No one found any complaint with this except the Italian importers in New York City. They started in at once to raise a slush fund to fight the tariff. The growers in Sicily and Italy agreed to pay from 5 to 10 cents on each box of lemons imported into the United States to help fight the tariff. They began a campaign to arouse the American public to a belief that it was being wronged, and to influence Congress to remove the tariff on lemons. Congressmen were appealed to by the agents of the importers, the pushcart men and the retail fruit dealers. Untruthful petitions were circulated, so untruthful that their mendacity was evident at a glance. One form of petition refers to the "burdensome duty on lemons," alleged to be "for the purpose of doubling the wealth of ten or dozen millionaires of California, and also for the purpose of paying the wages of tens of thousands of Japanese soldiers who exclusively monopolize the labor of the California lemon orchards, thus depriving American laborers of opportunity of labor and wages." This is very absurd, as well as false. To patronize the foreign lemon growers and steamship companies would be better, the importers think, than to patronize American railroads, American orchardists and American labor. Japanese are employed to a very small extent in the region where lemons grow. If there were enough white labor they would not be employed at all. Moreover, oranges and lemons are now grown in Arizona, Texas, Florida, Alabama, Mississippi and Georgia.

In One of the Shops of San Luis Obispo Polytechnic School.

Such petitions as those just referred to have been circulated at Atlantic coast summer resorts by "barkers," such as those who attract attention to the shows at seaside amusement parks, and many small boys signed them. Posters have also been displayed by these Sicilian agents charging the "high cost of living" on the lemon tariff, which would not cost the average person one cent in a year, if anything at all, for lemons have actually been cheaper this year than they were before the duty was increased, so that the dealers (who are really at the mercy of the importers), are promising a great deal if they promise to reduce the cost of lemons in case the present tariff is repealed.

The fact is that the duty was not a serious burden to the importers until very recently because the execution of the customs regulations permitted them to claim, and to obtain a rebate for alleged rotten fruit, amounting sometimes to fifty per cent of the cargo, which they were clever enough to sell afterwards as first-class

sound fruit. This has been stopped. A close observer in Washington said recently:

"What the government has lost in customs frauds will never be known, but as Collector Wm. Loeb, Jr., has shown at New York alone, the sum must reach many millions of dollars. Importers have shown the greatest cunning as well as unscrupulousness. They have had to refund millions of dollars to the treasury department. Some of the Italian importers were sent to jail. The Italian lemon importers are the latest to have been circumvented, but the government had to revise the regulations for the importation of lemons in order to head them off, and it took eight months to find out how to meet the case. Aided by an almost unlimited 'slush fund' put up by the Sicilian lemon growers, and by very shrewd and resourceful lawyers who are spending money lavishly to buy magazine and newspaper space, the Italian importers are now seeking to have the tariff revised in their interest. This is not the first time foreign interests have tried to shape legislation in Congress, but it is one of the boldest."

The way the treasury department stopped the importers from obtaining too big an allowance for decayed fruit was to make the estimates for rot on the samples displayed for sale. Almost any disinterested person would say that this was fair, but the importers protested wildly and vehemently. The treasury department, however, thought mere noise no argument, and the amount of money collected has increased.

The fact is, the tiller of the soil, although he thought it a bad thing for him that the reciprocity treaty should go through, has got to be considered when it comes to fixing up a list of producers who must have a fair share of protection. Legislation by Congress should be for the benefit of the people Congress represents, and not for the benefit of Sicily, Japan, Mexico, Spain, or any other country.

One reason why many men, after retiring from business undertake orange and lemon culture is the romantic interest attaching to it in a land where winter is unknown. But they need some profit to keep them interested in the work.

DOCTORING PLANTS AND CROPS.

A plant doctor? Yes, such a thing is coming, if not already at hand. It will not be very long now before, if your plants are unhealthy, or your crops droop, or your vines or trees do not thrive, you can call upon the plant doctor to call and examine them, and see what is the matter with them, and prescribe for their difficulty, if they are found to be ailing.

He will not exactly feel of the pulse and look at the tongue of your wheat field, for example, but will critically examine the grain, root and stem, and take a "culture" by clipping off a head or two for further inspection; and when he has decided what the disease is which is causing the trouble, will suggest the cure to be administered.

For a great many generations we have had a science of treatment of diseases of animals. Let anything go wrong with any of his stock, and the farmer well knows that he has the services of the veterinarian to turn to, skilled and practical and efficient. Assistance is at hand from this source at all times.

But, strange as it may seem, up to within a few years, at any rate, little or no thought has been given to the diseases of plants and how to cure them. The value of our plant products far exceeds that of our live stock yearly, and yet no precaution seems ever to have been taken to protect them from the ravages of disease. Why this should have been so for so many years is quite beyond explanation.

In 1883 grape diseases prevailed in the vineyards to such an extent throughout France that much thought was given to their prevention, which led to the discovery of Bordeaux mixture by Millardet, who demonstrated after many tests that copper mixture had a bright future for controlling fungous affections among plants. But little did he realize at the time the real importance and significance of his discovery, for with it came also a new era in plant pathology. Millardet's success awoke scientists at last to a full realization of the fact that plant diseases could be controlled and cured, as well as those of man and domestic animals.

What a field there is here in which science may lend its aid to the benefit of mankind! Many remedies and precautions it can suggest to the agriculturist to apply in similar cases, besides supplying the specialist to come to his aid when the difficulty is too intricate for hm.

Plant pathology will some day be a subject upon which the farmer will inform himself just as he does nowadays upon the chemical properties of soils and fertilizers and the principles of crop rotation. The day is not far distant, at that.—American Cultivator.

FLORIDA'S CROP.

Florida's next orange crop is much lighter than last year. Shipments began on October 1, while grapefruit shipments are ten days later. The Packer says:

"There has been quite a difference of opinion as to the size of the coming crop, some holding it will not be as much, some that it will equal it, while others are optimistic enough to hold that it will be a half million boxes larger. As the shipping season draws nearer and more definite conclusions can be formed, those who have been predicting a 5,000,000 box crop are beginning to lower their estimates.

"Figures for the past five years regarding the citrus fruit shipments are interesting, showing a substantial increase up to the past year, when an appreciable drop from the previous years is indicated. These figures, which come from a thoroughly reliable source, follow: 1906-07, 3,500,000 boxes; 1907-08, 4,000,000; 1908-09, 4,800,000; 1909-10, 6,178,000; 1910-11, 4,614,496."

Lack of rain is the cause of light crop, also of a large proportion of russets.

HIS IDEA OF A CYNIC.

Jack: "Gayboy and the girl he is engaged to are both cynics."

Tom: "What is your idea of a cynic, anyhow?"

Jack: "A cynic is a man who has had experience, or a woman who hasn't."

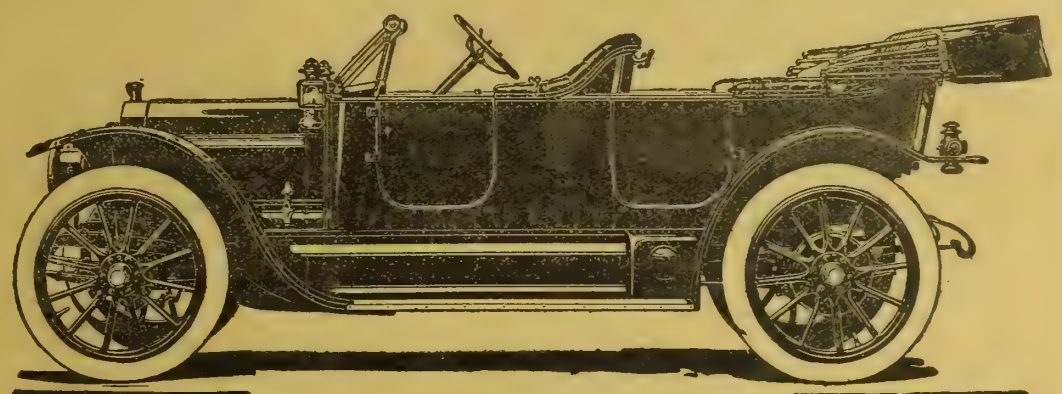
EFFECTS OF TRAVEL.

"Yes, sir," remarked the globe trotter, "if there is anything in a man, travel will bring it out."

"Yes," especially ocean travel," rejoined the man who had just returned from his first trip across the pond.

Rambler

1912—Cross Country—$1650



IT'S 38 horse-power, five-passenger, with 120-inch wheel base and 36x4-inch wheels and tires. *It's long, it's low, it's roomy.* Low, with drop frame—long, with front axle set forward and straight line torpedo body. Roomy, with 27 inches from front seat to dash and 30 inches from seat to seat in tonneau. No outside door latches. Enclosed ventilated front and hooded dash. A car of exceeding beauty, finished in English Purple Lake—it's a rare shade of deep maroon—trimmed in nickel. Radiator to conform to body lines, high and distinctive in appearance. Fenders with sweeping grace. Powerful brakes. To drive this car is exhilarating. It runs like a spirited horse. You touch the throttle and it's away. It's the Rambler Cross Country and the flag-bearer for 1912.

Equipment, Bosch magneto. Fine, large, black and nickel headlights with Prest-o-lite tank. Black and nickel side and tail oil lamps; large tool box; tool roll with complete tool outfit. Roomy, folding robe rail; foot rest, jack, pump and tire kit. Top, with envelope, $80—wind shield $35. Demountable Wheel, less tire, with brackets and tools, $30. Eveready Automatic Engine Starter $175.

The Rambler Magazine is ready. Send for it

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Main Office and Factory, Kenosha, Wisconsin

Branches: Boston, Chicago, Cleveland, Milwaukee, New York, San Francisco

1912
Thirty-eight H. P. Models

Cross Country, 5 pass	$1650
Suburban, 4 pass.	1650
Roadster, 2 pass.	1600
Sedan, 4 pass. enclosed	2500
Gotham, 5 pass. cab side Limousine	2750

1912
Fifty H. P. Models

Country Club, 5 pass.	$2250
Valkyrie, 4 pass.	2250
Moraine, 7 pass.	2500
Metropolitan, 7 pass. torpedo	2850
Greyhound, 6 pass. torpedo	2850
Knickerbocker, 7 pass. Berline type Limousine	4200

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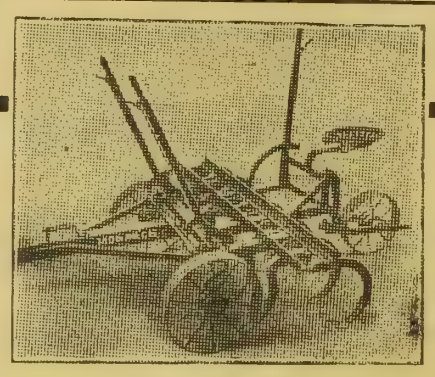

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Our Monarch Cultivator

while designed more especially for field use, is now becoming a favorite among orchardists where deep cultivation is desired.

This is the strongest chisel tooth cultivator on the market, and we guarantee it to give absolute satisfaction. We make special hard steel chisel points that will outwear all others. This is a good cultivator for bean or beet culture.

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Hooks are made of Flat Steel, 1¼ Inches Wide—6ft. of Wire.

Makes Propping Unnecessary
Insures Branches Against Breaking
Lifts the Lower Limbs
Makes the Fruit Grade Higher

Guaranteed to hold 250 lbs. Hooks swing on themselves and not on the limbs. Cannot bind the limbs.

Price: $12.50 per 1000 hooks Wire extra. F. O. B. Pomona, California.

Ranchers Mfg. Co.
POMONA, CAL.

Orange and Lemon Trees

Fifty Thousand High Grade Trees

SMITH AND CLARK COMPANY

PHONE 37 R 2 **Orange, California** R. D. 1

Deciduous Fruit Culture

COMPLETE LIST OF WINNINGS AT WATSONVILLE APPLE SHOW.

Feature Exhibits.

First, $200 — Watsonville High School's Panama Canal; score, 975.

Second, $125 — San Monte Fruit Company's globe; score, 885.

Third, $100—Santa Cruz Chamber of Commerce's Casino; score, 850.

Fourth, $75—Employes of California Spray-Chemical Company's "Spraying in 1923"; score, 810.

Fifth, $50—Y. M. C. A.; score, 780.

Sixth, $25—Monterey Chamber of Commerce's customs house; score, 760.

Seventh—Stewart Company's hemisphere; score, 740.

Eighth—Flath's growing Bellefleur tree; score, 700.

Carload Exhibits.

Sweepstakes won by Alaga Brothers with car of Red Pearmains.

Best car of Newtown Pippins, Gospodnetch & Zegar, Lakeside brand; score 774. Prizes—Official gold medal, $100 cash by National Ice and Cold Storage Company of San Francisco, silver trophy by W. Dennis & Sons of New York and Liverpool, 100 pounds arsenate of lead by California Spray-Chemical Company.

Second best car of Newtown Pippins, Earl Fruit Company; score, 750. Prizes—Official silver medal and $50 cash.

Best car of Bellefleurs, L. S. Bradley Company; score, 884. Prizes—Official gold medal and $100 cash, can Black Leaf "40," by California Spray-Chemical Company.

Second best car Bellefleurs, B. Pista & Bros.; score, 849. Prizes—Official silver medal and $50 cash.

Best car of mixed varieties, Loma Fruit Company, Green Cleat brand; score, 666. Prizes—$200 cash by Hihn-Hammond Lumber Company, silver trophy by Watsonville Register Publishing Company, 100 pounds Sherwin-Williams arsenate of lead by Charles Ford Company, $45 nailing press by A. Willows of Redlands, official gold medal by the association.

The other scores were: M. N. Lettunich & Co., Newtown Pippins, 746; Lettunich Bros., Newtown Pippins, 731; United Fruit Growers, Newtown Pippins, 681; Macdonald & Sons, Bellefleurs, 540.

100 Box Lots.

Sweepstakes—M. L. Kalish & Co., score 915.

Bellefleurs—Winner, M. L. Kalich & Co., score 915; second, Stephen Scurich, score 884.

Mixed varieties—Winner, Nick Banaz, Templeton, score 864; second, A. Balich Fruit Company, score 849.

Newtowns—Winner, Frank Radovan, score 880; second, H. T. Davis, Corralitos, score 875.

50 Box Lots.

Sweepstakes—Frank Radovan, Red Pearmains, score 916.

Red Pearmains—Winner, Frank Radovan, score 916; second, Ewell Fruit Company, Santa Cruz, score 825.

Newtowns—Winner, Milanovich & Pista, Hollister, score 801; second, Copriviza & Gera, score 648.

Bellefleurs—Winner, Gospodnetich & Zegar, score 993; second, Stephen Scurich, score 795.

Mixed varieties—Winner, Martin Bros., score 816.

Langfords—Winner, Goke & Way Company, score 636.

25 Box Lots.

Newtowns—Milladin & Moncovich, first, score 971; J. P. Braycovich Company, second, score 944½.

Red Pearmains—Monterey County Chamber of Commerce, first, score 938; Zar Bros., second, score 934.

Bellefleurs — Kingsley Company, Aromas, first, score 870; Stephen Scurich, second, score 867.

Jonathans—Loma Fruit Company, first, score 946.

White Winter Pearmains—F. P. Mannovich, first, score 962.

Spitzenbergs—Novacovich & Stolich, first, score 915.5.

Mixed—W. Sasaki, first, score 864.

Single Box Lots.

Spitzenberg—First, Novacovich & Stolich; second, A. H. Lloyd. Newtowns—First, C. G. Redman; second, J. D. Copeland. Hoover—First, C. F. Bauer; second, A. E. Elsbree. Grimes' Golden—First, O. P. Dix; second, G. E. Heaton. Senator—First, Walter Ralph; second, A. E. Elsbree. King David—First, Rivers Bros. & Co.; second, F. J. Ralph. Delicious—First, F. J. Ralph; second, A. E. Elsbree. Rome Beauty—First, Rivers Bros. & Co.; second, Mrs. H. Abbott. Fall Pippins—First, F. H. Nohrden; second, Stewart & Sons & Rodgers. Azone—First, George Forenich; second, George Hrepich. Arkansas Black—First, G. E. Heaton; second, E. A. Hitchings. Arkansas Beauty—First, E. O. Nelson; second, J. H. McBride. Ben Davis—First, C. P. Dix; second, C. F. Bauer. Jonathan—First, Ewell Fruit Company; second, T. J. Rolph. Red Pearmains—First, Ewell Fruit Company; second, H. P. Madsen. Lawver—First, S. M. Carey; second, Priesing & Henneman. Rhode Island Greenings—First, G. A. Brain; second, Frank K. Mott Company. White Winter Pearmain—First, C. Sandholdt; second, S. J. Kitzmiller.

Miscellaneous Awards.

First prize, best ten 25 lb. boxes of dried apples, Unglish Bros.; second, T. J. Hunsaker, Santa Cruz. First, forty 50 lb. boxes dried apples, Unglish Bros.; second, Quong Sang Lung. First, forty 25 lb. boxes dried apples, Unglish Bros.; second, Kingley Company, Aromas. First, bottled cider, S. Martinelli. First, bottled vinegar, Jones Bros.; second, Ewell Fruit Company, Santa Cruz First, barrel vinegar, Jones Bros.; second, Ewell Fruit Company. First, factory jelly, Ewell Fruit Company. First, canned apples, Mrs. C. G. Redman. First, apple catsup, Miss Rose Marshall. First, apple jelly, Mrs. M. A. Resh; second, Mrs. F. H. Nohrden.

HONORING PROF. COOK.

One of the live wires in horticultural matters for years has been the Claremont Horticultural Club, organized largely through the efforts of Prof. A. J. Cook. Prof. Cook has been its president since founding, and has been the greatest factor in its success. At its regular meeting last Monday new officers were elected, and on account of Prof. Cook's removal to Sacramento to take up the work of State Horticultural Commissioner, he retired from the office of president. Fortunately a most excellent presiding officer and

booster has been elected in Mr. B. L. Olds.

Regarding Prof. Cook's leaving and the greater responsibilities he is taking up, the following was read by one of his associates in college work and adopted as the unanimous sentiment of the club:

"The announcement that Prof. Cook has been appointed the State Commissioner of Horticulture involves a good many matters of most serious import. Pomona College is losing a man acknowledged by many very competent to judge as one of the greatest teachers and college professors in this country. Southern California is losing one of her most active and useful citizens. The whole state is gaining for the first time in her history a professional man in an office which absolutely requires a man of the broadest and best training.

"The loss to Pomona College will be felt most keenly by all of the students who have known Prof. Cook personally. His genial nature, his great heart, his tremendous and infectious enthusiasm, his keen interest in the

personal welfare of every student under him—these things have made him greatly beloved to all. His interest in his students has never, through all the years, been a perfunctory one, but always a living, active interest that went right out and fought for them, an interest that not only helped them to find their life work and get into it, whatever it might be, but ever after supported and encouraged them to great efforts. In a quiet way, unknown to the public, he has even financially assisted deserving students to complete their work, and for this he has been repaid in some things beyond the value of money—loyalty and love.

"The efforts of Prof. Cook to place his department in the college upon the most efficient working basis have been unexampled, involving the most strenuous endeavors, and leading even to severe personal sacrifices. The public has known little of all this, so that the fight has to a great extent been a lone one for Prof. Cook. Without just such a man through those days of struggle in the building of the college the Department of Biology would never have amounted to anything. All that it has accomplished is simply a measure of this man.

"Prof. Cook's services to the general public are warmly acknowledged by grateful men and women throughout the length and breadth of the state. His correspondence on horticultural and agricultural matters has for many years been of very extensive proportions—and religiously attended to with love and interest, and on his own time and expense. He has been for years the main mover in the Claremont Pomological Club, a large organization of great strength and usefulness. For all of these great services he has had no public acknowledgment, because the extent of his work has been known in the aggregate to but few. His reward has been found in the high regard of great numbers of our best people.

"Now comes this appointment to the State Commissionership of Horticulture—which is, as Governor Johnson well says, one of the most important offices in the state—as the crowning event of Prof. Cook's remarkable career, and it is an appointment that will be a lasting monument to the critical discernment and good judgment of Governor Johnson. No man in the state or in the country at large could bring to that office greater clean-cut and indubitable fitness than Prof. Cook. No man would be able so surely to gather about him a staff of the best working material in the whole country, for no man knows our American workers better, and no man is more favorably known to them in the light of a chief under whom they might 'jump in and do things,' without any of the petty and repressive supervision that spoils so much good material in our public offices. Prof. Cook is large hearted, sympathetic, kindly, and broad enough and big enough to make a good executive. The office is not only a great one in the state, but the greatest of its sort in the whole United States. No other office of the kind involves such great possibilities. It carries a large corps of well paid assistants and princely support. For the first time in the history of the state a man is now entering the office who knows thoroughly well the means by which these great possibilities may be practically developed to their greatest efficiency.

"Congratulations are due Prof. Cook, Governor Johnson, and the State of California. Lastly, let us think of ourselves for a moment, and the great honor to Pomona in furnishing such a man."

NOTES.

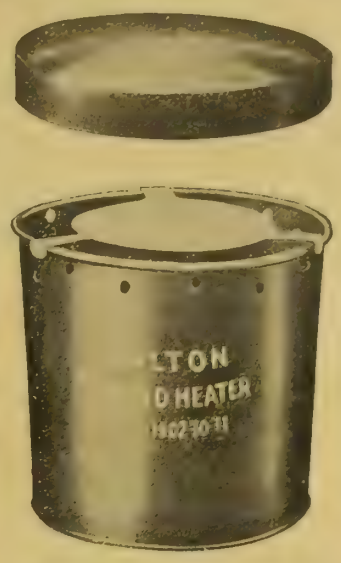
Never forget that it pays to grade the fruit.

If the hot fruit is placed in cold storage it immediately sweats, to the detriment of the easy wiping and packing. Don't forget that the least abrasion or cut in the skin gives the mold a foothold; and, once started, the decay will continue under the most favorable transportation conditions.

Work up the surplus apples into cider and if there are grapes to spare, try the unfermented grape juice.

A Victory

The Largest Lemon Grove in the World



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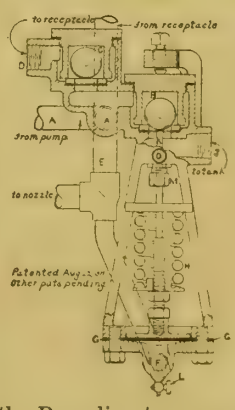

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No matter what size orchard you have, there's a Bean outfit that will exactly meet the requirements — efficiently, satisfactorily, economically. Bean Power Sprayers have large capacity, and are very light and portable. Illustration shows the Bean Challenge.

This Diagram Explains the

Bean Pressure Regulator

A new feature. It saves one-fourth to one-third the gasoline and the same proportion of wear and tear on engine and pump. ***We can prove it.*** This alone is a feature that ought to commend the Bean line to any orchardist in the field for an outfit. ***Send for our new catalogue. It's Free.***

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Some varieties sold out.

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is still complete. Catalog and price list mailed on request.

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For fall and winter planting, also Flower Seed for fall sowing.

New catalog now ready, mailed free upon application.

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Payne's Royal Exhibition Pansy Seed
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$1000 profit per acre; plant now. Berry plants of all sorts. Cut this adv. out and mail today.

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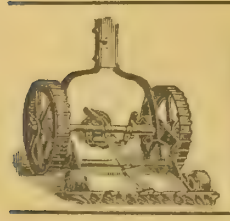

THE CLIPPER

There are three things that destroy your lawns Dandelions, Buck Plantain, and Crab Grass.

In one season the Clipper will drive them al out.

Clipper Lawn Mower Co
Dixon, Illinois

Thin carrots, beets, etc., if they are thick. The extra plants become weeds in effect, if allowed to grow.

Small Fruits and Vegetables

KOHLRABI.

I am not an admirer of turnip flavor, though many persons are. There is not much objection to kohlrabi, however. It is milder in flavor than turnip, it is tenderer while young, it comes earlier, and it is very easily grown.

My advice is to sow a little row of it, for you have plenty of time yet to do it. Thin it to stand a few inches apart in the row; no need of transplanting it. In preparing kohlrabi for the table, use the globe shaped enlargement above the root, the base of the leaf stalks. This is peeled and cooked like turnips or cauliflower. A good cook can make it very palatable. White Vienna is the variety mostly used and most suitable for these purposes.—Farm and Fireside.

LIMING SOIL.

We would not spread lime on potatoes after they are up and it is very doubtful whether we would apply it to ground where potatoes are to be planted. On soils that are alkaline in reaction, the potato scab is more likely to develop than in soils tending to be sour. Moreover, we would not add lime to any soil; we prefer ground limestone or marl. These substances do not destroy the organic matter in the soil, while lime, whether it be in the form of calcium oxide or calcium hydrate, does destroy more or less of the organic material. When nitrate of soda is used as a fertilizer, it is customary to apply from 200 to 300 pounds to the acre for potatoes, corn, oats and grass.

Never plant melons near squashes or pumpkins.

FORMALIN FOR SEED POTATOES.

Take a pound of formalin to thirty gallons of water. Place the potatoes whole in a sack, suspend them in this solution for two hours, spread them out to dry; then cut and plant. The conclusion is that the treatment of seed potatoes not only tends to keep them relatively free from scab and other defects, but gives a better stand, and the total yield is in this way increased.

SWISS CHARD.

Swiss chard, or the leaf beet, is another vegetable that should be oftener grown. The seed may be sown at the same time as the ordinary beet crop; the leaves thinned as they crowd; and later part of the leaves may be taken off the plants and cooked; the plant replacing those taken with others. Swiss chard is relished during the summer and autumn, when spinach is scarce. It is also a profitable plant to grow for poultry.

Drilling in the Seed.

CABBAGE.

Cabbage is a biennial, a native of Western Asia. There are three principal groups—the red-leaved cabbage, used principally for pickling and salads; the smooth-leaved cabbage, which is the ordinary garden type; and the wrinkled-leaved or Savoy.

Working in Onion Sets With Planet Jr.

It is a well known fact that size counts for more than anything else in getting fancy prices. An apple of medium size often brings more money than a large one, but when it comes to the strawberry, consumers want berries of extra size. Color and quality are also important, but size is of first importance in the effort to secure the best prices.

STAR PORTABLE DRILLING MACHINES

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As steady, quiet, and even as a clock, after years of hard service, and that in every kind of place and under every condition. That affords a driller a lot of satisfaction and saves a wonderful lot of expense, time, and worry That's why

Star Portable Drilling Machines

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More Hole—Greater Depth—Less Cost

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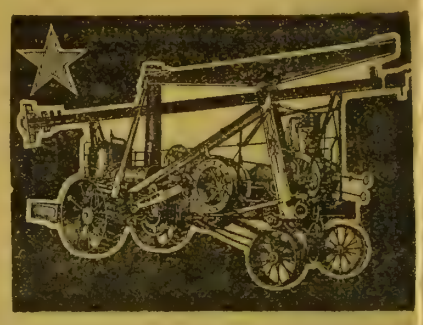

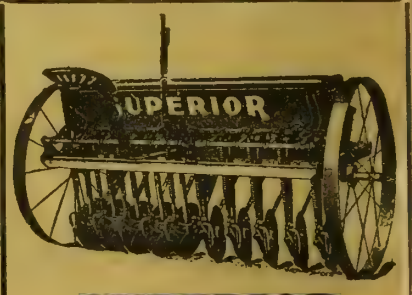

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that means something. We have sold thousands of tons and our sales are on the increase.

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Largest Manufacturers of Fertilizers, Poultry Foods and Bone Charcoal on the Pacific Coast.

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Sow Vetch in your citrus groves;
Sow Foenugreek in your walnut orchard;
Sow Peas where you intend to plant melons, potatoes, and tomatoes;
Sow at once to get greatest benefit. We have a bargain in peas.
Write us, ask about it, and buy.

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Make Big Money Drilling Wells

IMPROVED STANDARD DRILLING MACHINE
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WESTERN MADE FOR WESTERN USE

REIERSON MACHINERY CO., MANFRS., PORTLAND, OREGON

The Ornamental Garden

GOSSIP FOR THE FLOWER LOVER.

Answering query as to how to make the crab cactus bloom, the Farm World says:

If this is identical with, or closely allied to the humming-bird cactus, a rich soil composed of loam, with a little sand. is good for the plant.

See that the drainage is good. During the warm weather, treat it like the geraniums, watering almost as much and feeding it once a month with liquid manure, or other plant food. The buds should form in the autumn and from Thanksgiving to Christmas the normal plant is covered with blossoms.

Let it rest during the winter, watering it just sufficient to keep it from drying.

Sometimes, especially after profuse blooming, the branches shrivel and drop off. This may be due to overblooming, but it is more frequently traced to imperfect drainage. In the latter case, the better plan is to repot.

There are myths and notions prevalent regarding many plants, among them being one that the knife-blade cactus, one of the broad-leaved type, will not bloom until it is seven years old.

Whatever may be the magic held in the number seven, it has no force in this case; for while it is true that many of the cacti are slow to attain the blooming size under ordinary cultivation. when conditions are just suited to their growth their flowers are produced much sooner.

As a rule, when a cactus shows signs of making a new growth, it is safe to water it moderately. During the periods of rest it should have only enough to keep it from drying up.

The rest period differs with the various species, but it can be easily determined with a little observation. The spiny varieties almost uniformly like a sandy soil, though some of these may be fertilized freely with liquid fertilizer when growing.

The Phyllocacti and other leafy stemmed varieties, require some loam with sand.

Those who like a profusion of bloom will find it hard to clip or pinch back all the lateral branches on the chrysanthemum, yet this is just what professional grower does to produce the mammoth show-blossoms. No plant can do more than a certain amount of work, and if the strength is concentrated in the terminal blossoms. their greater perfection will be the reward.

Phlox. and many other annuals, grow straggling if allowed to flower and form seeds in their own sweet way. To keep the bed sightly, one must continually pick and prune. It is a part of nature's plan to make us generous with her most beautiful gifts.

If you have been so unfortunate as to have a vase or porch box filled with plants which clash in color scheme, cut out the offending members. Scarcely a day goes by that we do not see the scarlet geranium and the crimson petunia growing side by side.

This is an offense to good taste. The petunia can be easily transplanted or cut out entirely, and started as a slip, making some spot beautiful, while it detracts from the appearance of the collection.

The florist may know all about raising thrifty plants, but he not infrequently errs in their arrangement.

THE PROPAGATION OF FERNS.

The ordinary way to propagate this class of plants is by dividing the plants, by the creeping rhizomes, by the little bulblets that form on the fronds, and by the seeds or spores that appear on the under side of the leaves.

The enterprising fern-lover will find it most interesting to propagate by spores, and perchance produce a really valuable addition to these beautiful and graceful plants.

Procure a seed-pan, or box, with plenty of drainage holes, and cover the bottom with broken crockery. On this place half decayed sod. and fill with carefully mixed and sifted leaf-mold and sand. Make the surface of the soil perfectly smooth and level, and then scatter the spores on it, and leave them without any covering, that is of soil. However, they must be enclosed in glass, by placing a pane of glass over the seed-box or pan.

Water, by placing the seed-pan in water, and keep it there until the water appears on the surface of the soil. Then remove at once, for too much water will destroy the spores. Keep the box in the light, but not the sun, remembering that ferns naturally grow in shady places, and that we should try to follow nature's lead.

Aim to have something new every year, but not a high-priced novelty. The sensitive plant is handsome and intensely interesting in its habits. If you have never grown it, try it for the children. Study its queer habits, and you will always find it entertaining.

Go over the lawn and pull the weeds, or cut them below the crown, especially the plantain.

MORSE'S

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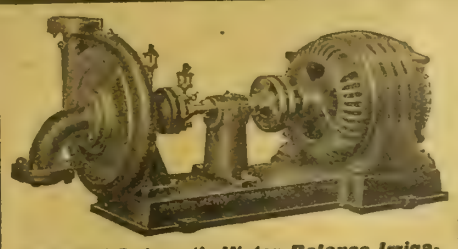

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Bees and Their Care

FOUL BROOD OF BEES.

From all parts of the country reports are received of foul brood, the ever-present disease of the country, because diseased hives, whose inhabitants have died, are too often left standing without any care on the part of the disappointed beekeeper. Some day we must hope that the law will compel the careless beekeeper to destroy or disinfect all infected hives, and thus render them harmless to his neighbor's bees.

This highly contagious disease must not be confused with chilled brood, so common in the spring, when the bees of the brood chamber contract their cluster, leaving the brood to perish of cold, or when the supply of food is reduced and insufficient for the daily wants of the hive, the brood dies of starvation. The dead brood, which is first white and then black, may often be found on the alighting board or on the ground around the hive. This is not a disease at all.

Symptoms.

Foul brood is of two types—one that is mild, and may, with care, be cured; and the second of a more virulent nature, and consequently almost impossible to cure. It is caused through a germ called bacillus alvei. The brood is first attacked generally, but the older bees may also suffer from the disease. We know that healthy brood occupies the whole of the central part of the frame or comb in a very compact manner, and should it be examined it will be seen that it is very white indeed, and plump, in a very healthy state.

Should disease germs find entry into a hive the color changes to yellow, then brown, and, if left, will contract to a mere scale. In its earliest state the brood loses its plumpness and firmness. The cappings of healthy brood are slightly convex and whole, but those containing diseased brood are covered with cappings concave in shape and often perforated. In the virulent state the stench is almost unbearable, even when the hive is closed, but in a mild state little or no smell is observed, though the conditions of the brood are identical.

The dead brood becomes a sticky, coffee-colored mass, and if a match stem be inserted into a cell, the mass is so viscous that it will adhere to the stick and stretch out in a long thread. By the time this stage has been reached the bees seem listless and uninterested, and may be found on the alighting board trying to ventilate the hive to rid it of its evil odor.

Remedy.

In the virulent case it will be best to destroy the bees, internal fittings and quilts, and thoroughly disinfect the hive, as described later. In the case of foul brood in its earliest stage, when the colony is not seriously reduced in number, then brush off the bees from the combs and make an artificial colony, placing the bees in a skep and confine them for about thirty-six to forty-eight hours without food. During this time the bees infected will die.

Prepare a clean hive with full sheets of foundation, using as many as the remaining bees will cover in a crowded state. Do not forget to burn the skep in which the bees were imprisoned. Cover up the bees warmly, and feed on the medicated syrup, which at this season of the year may be ten pounds of cane (white lump), seven pints of water, one ounce of salt, one-half ounce napthol beta solution, mixed as directed on the packet, and boil all, save the napthol beta, a few minutes, stirring to prevent burning. Give it to the bees luke-warm. All the operations must be carried out at night, to prevent the spread of the disease by robbing. The beekeeper himself can spread the disease by examining healthy colonies after unhealthy.

The old hives must be thoroughly washed with boiling water and carbolic soap. When the hive is dry, the sun should be allowed to shine upon every part, as far as possible, then we can paint it outside and in with a solution of carbolic acid, using twice as much water as acid. On the floorboard of the hive now occupied by the bees from the diseased hive place a naphtha-line ball. After handling a foul brood the beekeeper should wash not only his hands, but his clothes and all he has handled, including the smoker, in a solution of carbolic acid, using ten to twelve times the water, as acid.—American Cultivator.

SOME BEE HABITS.

In an eastern exchange in a description of a large apiary belonging to Mr. Horace Libby we note the following regarding bee habits:

"The drone is much larger and thicker than the worker and is the male of the hive. The queen is the female and may be called the mother of the whole colony and is still larger than the drone. The workers are much smaller and so far as sex is concerned may be called neutrals. It is their function to perform all the labor of the hive, to explore the surrounding country in search of honey, to supply all the wants of the queen, to defend the hive from all attacks, and to carry on hostilities against all enemies. The queen lays all the eggs, while the drones are the fathers of the colony and do nothing that savors of work. There is but one queen in a hive and

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1 gallon ..... .65
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For Horses, Cattle, Swine, Poultry
No horse, cow, pig or chicken can be kept well at all times without some medicine to settle, help or cure digestion, stimulate the liver and kidneys and maintain all the functions of the body in a normal state. It is as necessary to give your animals such medicines as for you to take some physic, tonic or reconstituant at some time or other, with that difference, though, that you know, or should know, when you need to take it, whereas your animal does not.

Directions—Give every day to horses 1 heaping tablespoonful; cows, 2 tablespoonsful; sheep, 2 heaping teaspoonsful; hogs, 2 teaspoonsful; chickens, 1 tablespoonful for every 12 hens.

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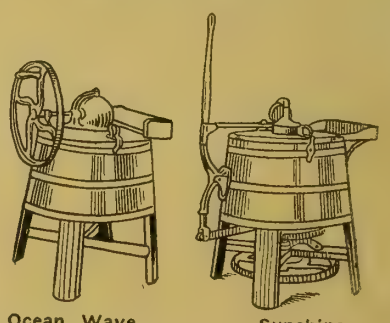

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she is treated with the utmost kindness and affection by all the others. The drones are but a small portion of a colony and these are promptly killed by the workers after they have performed their function. The number of bees in a hive varies greatly at different times and runs all the way from two thousand up to fifty thousand.

"The anatomical structure of the bee is no less wonderful than its habits. They are provided with a long and flexible proboscis with which they can explore around the petals of any flower and scoop up the nectar which is passed along to the first of its two stomachs where it is clarified before being placed in the honey cell. The pollen of flowers is also collected by the bees as food for the young and stored in combs until it is needed. The pollen is not taken into the stomach but is kneaded into a ball of paste and attached to their legs. The wax of the bee is a secretion of the abdomen and is not made from pollen. It is probably separated from the nectar and may be called the residue of the honey.

"The instinct of the bee in gathering and storing honey is marvelous. In the bright lights its vision is keen and it alights unerringly on the flower that contains the nectar and then is just as certain in its flight homeward. When a mile or more from the hive it rises straight into the air and after circling around a few times takes the traditional bee line for home. They are very susceptible to both cold and heat and a temperature of 40 degrees will render them torpid. When clustered in the hive, however, they will stand a severe temperature without apparent injury. As weather prophets their instinct is infallible, and while hard at work in the fields will frequently quit all of a sudden and flying home crowd into the hive as quickly as possible. This is a sure sign that a sudden storm of some kind is close at hand.

"The construction of the comb is one of the marvels of geometry in which the bee excels the human architect. The geometric form of each cell in the comb is a hexagonal prism terminated by a trihedral pyramid, the three sides of which are rhombs which meet at the apex and form oblique angles with the sides of the prism. There is never the slightest variation in making these combs. Within recent years man has imitated these cells so that the bee is now relieved of much of this work and has more time to devote to gathering honey. The fact, however, remains that as an architect the bee has no rival in all nature."

BEE KEEPING FOR WOMEN.

It was no preconceived plan which made a bee keeper of me. It was one of those things which just happened. As long as I can remember we had kept a few bees at home. I took no part in their management, but have vivid recollections of wild rushes after my father when the bees were swarming. About ten years ago my father purchased some sixty-five colonies with the intention of going in almost entirely for bee keeping. For two seasons we were fairly successful. Then a series of hard winters, coupled with poor management, sadly depleted our stock, until in the spring of 1907 we were reduced to eighteen colonies, and only about three of these were in good shape.

During these years I had helped in the summer with the bees, and in the winter was attending school in Toronto. I left school ardent to do something for the betterment of the world. The world was perhaps wiser than I, and was not particularly appreciative of my efforts; so, somewhat discouraged, I undertook to build up our apiary and bring it back to a paying basis, partly because nothing better offered worth leaving home for, partly because I wanted some money, and partly because I desired to prove in some way that I really was some good. And thus I found myself really launched as a bee keeper.

My equipment consisted of a little general knowledge of bees, eighteen poor colonies, a good honey house, an extractor, and a cumbersome quantity of supplies equal to running about 150 colonies. I have kept no account of things, so for the years which follow I have to trust to my memory, and can give you only approximate figures. That first summer I was able to about double the number of colonies, but only had a small quantity of honey. My spring count in 1908 was thirty colonies; honey crop, 1,000 pounds; colonies put away for winter, fifty-five colonies. Everything promised wonderfully this spring. The bees were in nice condition. However, after the warm weather in March, which brought the bees out unusually early, the succeeding cold seemed to sap their energy. The weather during apple blossom and dandelion time was cold and wet, and the bees failed to fill up with brood. Then, before they were nearly ready for it, the clover was in bloom. The basswood was unusually good, which saved the situation somewhat; but even so, I only had about 1,600 pounds of honey. I had set my heart on increasing to one hundred colonies, but when the time came to pack up for winter I found I had to do a good deal of doubling in order to make them strong enough, as I have found out what I suppose every bee keeper finds, that it does not pay to winter weak colonies.

Much of my profit was also eaten up by the sugar I had to buy for winter stores; as the clover dried up the first week in July, the new colonies were very low in stores, and the old colonies were also nearly all light; but, in spite of the apparent discouragement of this year, I feel better satisfied with it than with any yet, as I am beginning at last to feel myself master of the situation. I have had practical experience in increasing, in doubling, in wintering, in queen rearing and in moving, and feel that I have a good basis for going ahead with. Although the amount of honey taken each year may seem small, it is partly due to the neighborhood, which is rather a poor one. The fall honey flow is hardly sufficient to keep things going, there is not much basswood, and alsike is not grown for seed.

When I speak of bee keeping to people who know little about bees, they usually exclaim: "But how do you manage about the swarming? Do you hive the bees yourself?" The experienced bee keeper knows that by proper management swarming can be almost overcome. The greatest difficulty to my mind is the heavy lifting, and on this account, unless a woman is fairly strong, it would be quite impossible for her to go into bee keeping on a large scale. Two girls can often work together with advantage. My sister sometimes helps me, and then we have no difficulty in lifting the heaviest hives. The hive lifting device suggested by some of the members would obviate much of this. Outside of the heavy lifting, there is no work about a bee yard which a woman of ordinary intelligence ought not to be able to do as well as a man; in fact, for the close attention to detail and the constant watchfulness, a woman ought to be specially fitted; and on these two elements success largely hinges.

Now for some of the advantages for a woman in bee keeping. In the first place, unlike poultry raising, all the work can be done in fine weather, in fact, has to be done. Even in the summer, unless during the busiest season, there will be a fair margin of time for other pursuits, and all the winter is free; the work is healthful, taking one into the open air and keeping one constantly in touch with the great world of nature. It will yield a good profit for a comparatively small outlay, the chief capital required being brains and perseverance. Most important of all, the work is interesting, even absorbing. Can you imagine anything more suggestive of peace and contentment than to stand in the midst of a bee yard, one's own bee yard, the sun beating down warmly, the air heavy with the fragrance of blossoms, sunshine glinting on flashing wings, and the air full of a steady hum which rises to a subdued roar? Then it is indeed that we know what a goodly thing it is to be alive.

Even for the woman who does not wish to go into bee keeping on a large scale, it can yet be made, in most localities, the source of quite a little income, especially desirable where there is a large family of girls, as well as providing a wholesome sweet for the table. I have in mind two friends who keep from ten to a dozen hives of bees, which on an average net them about $100 a year.—Ethel Robson.

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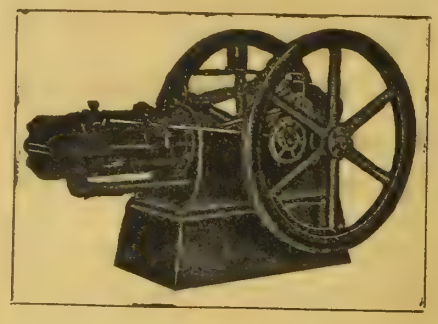

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Irrigation and Forestry

STREET AND ROADSIDE TREES.

By Ernest Braunton, Forester of Los Angeles County.

Too many of our street trees are chosen without consideration of their fitness. It is not enough that they should be pleasing in appearance. Some of the principal qualities required for a suitable street tree are here noted:

(1.) A compact stateliness and symmetry of general form and outline (with ample foliage), as distinguished from a wide spreading or a pendent tendency, so that the stem can be relieved of side branches to a height sufficient to allow a free circulation of air beneath, and also that they may not interfere with the comfortable use of the sidewalks and streets.

(2.) Healthfulness, so far as being exempt from constitutional diseases, and ability to withstand the many evils which city trees have to encounter, such as reflected heat from buildings, short supplies at times of water, and the same of soil.

(3.) Cleanliness, as characterized

Ernest Braunton.

by persistency of foliage, freedom from fading flowers, and measurably exempt from attacks of insects, such as leaf eaters, scales, etc.

(4.) Not liable to throw up suckers from the roots; of vigorous but not excessive growth. A tree of extremely rapid growth is usually short lived, but few of our evergreens are too rapid in growth, and deciduous trees are almost out of the question for Southern California cities.

(5). The branches should be elastic, rather than brittle, that they may better stand heavy storms and twisting gales, which are more prevalent in cities than happens in seemingly more exposed situations, though in our state we have far less than do they who live east of the Rockies.

Evergreens.

While it is, perhaps, not possible to select any one tree which possesses all of the above qualifications, we can select those species which experience has proved to approach nearest to perfection, and among the great numbers available, coming as they do from every land, we may surely find some tree that will suit the majority of those living on any street.

The following list is a very general one and includes nearly all those suitable for planting in Southern California. A few of them thrive in all sections, many of them quite generally throughout our end of the state, and a few in restricted localities only. In planting a considerable number of species, a thorough knowledge of local conditions and requirements is necessary as well as a keen discrimination in choosing the list for planting.

Schinus molle, Pepper Tree; Acacia dealbata, Silver Wattle; Acacia decurrens, Green Wattle; Acacia cyanophylla, Blue-leafed Wattle; Acacia melanoxylon, Blackwood; Acacia floribunda, Everblooming Acacia; Quercus suber, Cork Oak; Quercus agrifolia, Live Oak; Sterculia diversifolia, Bottle Tree; Eucalyptus callophylla, White Flowering Gum; Eucalyptus Polyanthema, Red Box; Eucalyptus rudis, Desert Gum; Eucalyptus ficifolia, Scarlet Flowering Gum; Eucalyptus amygdalina (narrow leaf) Messmate Gum; Eucalyptus robusta, Swamp Mahogany; Eucalyptus punctata, Hickory Gum; Eucalyptus sideroxylon, Red Ironbark; Eucalyptus leucoxylon, White Ironbark; Eucalyptus platyphylla, Broad-leaved Gum; Jacaranda ovalifolia, Trumpet-flowered Tree; Casuarina stricta, Beefwood, She Oak; Ficus macrophylla, Moreton Bay Fig; Grevillea robusta, Silk Oak; Pittosporum undulatum, Victorian Box; Pittosporum rhombifolium, Saw-leaved Box; Camphora officinale, Camphor Tree; Ceratonia siliqua, St. John's Bread; Albizzia lophanta, Crested Wattle; Ligustrum ovalifolium, Japan Privet; Nerium Oleander, Oleander; Calodendron Capense, Cape Chestnut.

Palms.

Trachycarpus excelsus, Windmill Palm; Washingtonia robusta, Mexican Fan Palm; Washingtonia filifera, California Fan Palm; Livistona australis, Australian Fan Palm; Erythea edulis, Guadalupe Palm; Cordyline indivisa, Dracena, or Palm Lily; Cordyline australis, Dracena, or Palm Lily; Cocos plumosa, Queen Palm.

Deciduous.

Platanus orientalis, Oriental Plane; Fraxinus lanceolata, Green Ash; Castanea sativa, Chestnut; Melia Azerdarach umbraculiformis, Umbrella Tree; Hicoria Pecan, Pecan; Quercus pedunculata, English Oak; Quercus lobata, California White Oak; Liridendron tulipifera, Tulip Tree.

* * *

The state law defining the duties and powers of County Boards is quoted in part as follows:

"The forester shall have power and it shall be his duty to enforce the provisions of this act and all lawful orders of the board and he shall be and hereby is vested with all the powers of a peace officer to make arrests for the violation of any of the provisions of this act.

"Every county board of forestry appointed under the provisions of this act shall, within their respective counties, have exclusive power over and jurisdiction to decide upon the variety, kind and character of trees, hedges and shrubs that shall be planted upon said roads, highways, grounds and property; and to determine all questions respecting the pruning, cutting and removal of any trees, hedges and shrubs now growing and to grow thereon and the necessity therefor and the extent of and the manner in which said work shall be done; and to enforce, carry out and effectuate the pro-

visions of this act; provided, however, that said board in the exercise of its powers and the performance of its duties hereunder, shall not interfere with the jurisdiction of the board of supervisors over the roads, highways, grounds and property in the improvement, care and general control thereof.

"It shall be unlawful for any person or corporation (except said county board of forestry) in any county or city and county where a county board of forestry has been created and appointed under the provisions of this act, to trim, prune, cut, deface, destroy or remove any shade or ornamental tree, hedge or shrub growing or to grow upon any such road, highway, ground or property, or to paint, place, attach to or put upon such trees, hedges or shrubs any sign, notice, advertisement or advertising device without the consent in writing of said board first obtained, or to plant any tree, hedge or shrub on any such road, highway, ground or property without such written consent.

"Every person who shall violate any of the provisions of the preceding section shall be guilty of a misdemeanor.

"All moneys received as penalties for the violation of the provisions of this act, shall be paid into the county treasury to the credit of the county board of forestry fund, which fund is hereby appropriated and the moneys thereof hereby appropriated for the expenses of said board in the carrying out of provisions of this act and the policy and purposes herein provided."

"PRACTICAL FORESTRY IN THE PACIFIC NORTHWEST."

The Western Forestry and Conservation Association at Portland, Oregon, has issued "Practical Forestry in the Pacific Northwest" which has to do with measures for protecting existing forests and growing new ones, from the standpoint of the public and that of the lumberman; it also gives an outline of technical methods. It is written by Mr. E. T. Allen, formerly U. S. District Forester and now forester for the association issuing the booklet.

There is a keen and growing interest in the subject and people of the western states realize that the forest is a community resource and that its destruction injures the community's welfare. Even the lumbermen are coming to regard timber lands not as a mine to be worked out and abandoned, but as a possible source of perpetual industry.

This book is issued by the association to gather together and place before the people information as to forest management as applied to western conditions. One hundred and thirty pages are given to discussion of these questions, and the volume should be valuable in the hands of the forester and in educating people to the needs of the Pacific Coast. A few sentences we note in it referring to the necessity of stopping forest fires:

"A San Francisco can burn down and it is soon replaced. Insurance and capital come to the rescue, labor is employed, and business is resumed. But when the forest burns, industry dies and labor is driven away empty handed. It is a big price to pay for neglecting the slight effort required to prevent it."

FARMERS AUTOMOBILES.

On the prairies of Dakota many farmers are using automobiles; the same is true of Oklahoma and other sections of the West. The automobile is playing a star part in the agricultural development of the country. One sees loads of milk cans gliding over the roads on the way to the dairy, or the tons of wheat going at a pace of thirty miles an hour; indeed, a strange contrast to the rickety-rick of the ox-cart, plowing its way hundreds of miles into Chicago, as it did fifty years ago. The automobile is used for utility, whether it be to carry the good wife herself with poultry, butter and baskets of eggs to exchange on Saturdays, when everybody "went to town" for a social meeting and day of "trading." The tonneau of the automobile holds the produce and she is soon free with hours to do her "shopping" now.—Joe M. Chapple.

Among the Giant Redwoods. —Courtesy State Forester.

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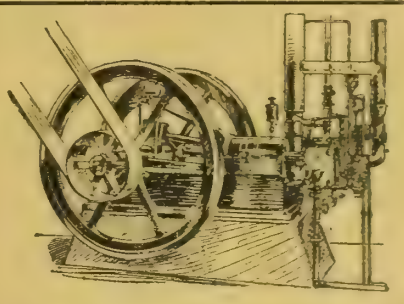

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A Journal of Horticulture and Agriculture.

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RURAL POSTAL SERVICE.

The Rural Postal Delivery Service now costs $36,844,968 a year to maintain 42,752 routes. Is is estimated that by 1915 the annual appropriation for this service will reach $50,000,000.

HONEY PLANTS IN CALIFORNIA

The State Agricultural Experiment Station at Berkeley is mailing Bulletin 217, "Honey Plants in California." Every beekeeper should write for it. It has been prepared by M. C. Richter.

FATTENING POULTRY

The Department of Agriculture has just issued Bulletin 140, "Fattening Poultry," by Alfred R. Lee. It contains some 60 pages with valuable feeding points and illustrations of crates and cars for shipping.

PERCHERON BREEDERS

The annual meeting of the Percheron Society of America will be held in Chicago at the time of the International Livestock Exposition. The meeting opens Monday, December 4th. This organization is succeeding and is registering more draft horses than all others combined.

BIG PREMIUMS

The National Dairy Show beginning in Chicago today and continuing until November 4th, is offering a total of over $15,000 in premiums and trophies. The largest single offerings are for the best five dairy cows of any breed. The first, second and third are respectively $1,000, $250 and $100.

BOX APPLES SHORT

Chicago reports from the Pacific Coast section a general shortage of apples. This, we think, is more true of other states than of Califirnia, for this state will have an output up to normal, but the eastern market is considering the situation with the output of box apples materially shorter than ordinary.

RAISINS SHORT

With the shipping of the first raisins well started it is apparent that the crop will fall short of even the earlier estimates. Drying is proceeding very slowly because of unfavorable weather. Some purchases have been made at the 5-cent mark. Hanford claims credit for the first car of 1911 raisins.

COMMERCIAL FERTILIZERS

John S. Burd, Chemist in Charge Fertilizer Control of the State University, is author of Bulletin 221 now being mailed by the Agricultural Experiment Station at Berkeley. It has a fund of valuable information as to fertilizers and a list of analyses of fertilizer samples forwarded to the control, giving value per ton of each.

ONE STEP.

The conservation talk has now resulted in one step in the right direction in the lumber industry. Heretofore all lumber has been sold in even lengths, causing vast waste, because often a log will produce a board an inch or so short of, say, 12 feet. This, under the custom which has obtained, could not be reduced to 11 feet and sold as an 11 foot board, but must be cut down to 10 or an even number of feet. In time 11, 13 and 15 foot boards may be found in our lumber yards. Some objection to the change has been raised by carpenters who have become accustomed to the even foot lengths, but the world's lumber supply is diminishing rapidly and is also increasing greatly in price, and this latter is doubtless the determining factor in the change.

APPLE SHOW

The Oregon Apple Show will be held in connection with the 26th annual meeting of the Oregon State Horticultural Society at Portland, November 15 to 18. The complete premium list may be had by addressing Mr. Frank W. Power, 1206 Yeon Bldg., Portland.

THE WRONG ENGRAVINGS

A regrettable mistake was made in last week's Cultivator in the bringing of engravings of the University Farm at Davis into the San Luis Obispo Polytechnic School article. The editor was away attending the Country Life Conference at Davis, which perhaps gave to the foreman license to reproduce scenes of the Farm. The San Luis engravings were all in hand and some of them are appearing in this week's paper. That school is making a most enviable record and is attracting pupils from all parts of the state.

HORTICULTURAL COMMISSION.

The long contest for a horticultural commissioner to serve for four years has been ended by the appointment by Governor Johnson of Prof. A. J. Cook of Pomona College. Prof. Cook has been sworn in and will on November 1 take up the work which has been laid down by Mr. Jeffrey who has filled the position acceptably for the last four years.

Prof. Cook comes to the office after a lifetime of work with insects, which abundantly qualifies him to fill the position. Prof. Cook writes asking for the support of all the fruit growers. We quote from his letter:

"I wish to thank sincerely the many fruit growers who have so generously, heartily and loyally recommended me for the position. I also wish to thank the late commissioner, Mr. J. W. Jeffrey, whose splendid service will make our work easier. He has won praise from a host of our best ranchers, which will spur us on to our best endeavor that we may win like favor. It is a superb opportunity for a grand service, and if splendid results are not forthcoming, then we shall be truly worthy severe censure. We bespeak the loyal support of all our ranchers."

IMPROVEMENT

A couple of years ago the Cultivator had occasion to criticise the surroundings of the University Farm at Davis, a small town which asks to be made an educational center for rural youth. The criticism was upon moral conditions and the unattractive appearance of many of the streets. A visit this year shows material improvement in one line, for while the large number of saloons mentioned in the former article still exists so far as indicated by signs on the doors, the doors are now locked and the business closed up. This resulted from an act of the legislature, not from any advancement at Davis. This is to be regretted so far as Davis is concerned, because an opportunity was lost to take up an enlightened position before the other communities of the state and show that she appreciated the location of a great educational institution at that point. Perhaps the incident points a greater lesson in this that the performing of this act by the state carries more weight than if done by one small community. Be that as it may, the saloons are closed and doubtless a cleaner moral atmosphere will obtain.

Along the streets a generally cleaner appearance prevails, but it must be confessed that the pigsties still adorn the main approach to the farm. In this connection it may be in order to refer to the effort of the better element of the place to incorporate. This should be encouraged as it will give strength for every step leading toward the betterment of the community.

SALT IN CYANIDES

Much concern has been felt by orange growers because of the salt content of a large shipment of sodium cyanide secured for purposes of this fall's fumigation. Prof. Woglum has recommended that the content of sodium chloride in the cyanide should be less than one per cent in order to secure fullest action of the gas and best results on the pests. Samples from this large shipment were taken for analysis and some of them showed as high as 18 per cent of sodium chloride. In view of Prof. Woglum's recommendation it appeared that this great quantity of cyanide would be a total loss. Samples, however, were sent to the chemistry department of the college of agriculture at Berkeley and Mr. George H. Colby and Mr. George P. Gray made extensive experiments and analyses. In their report of these experiments they refer to the former opinion as to sodium chloride reducing the efficiency of the cyanide and say according to these tests the salt in these samples submitted "would decrease the efficiency one-third, requiring the use of one-half more cyanide to produce the same amount of hydrocyanic acid gas." These chemists undertook a special study of the subject and decided that the method of analysis in the past had given different results from the chemical action in the fumigation in the field work. For purposes of analysis in the laboratory the cyanide had been placed in solution. These gentlemen then followed in their laboratory the procedure followed in the field, and as a result of their experiments have determined that the presence of sodium chloride is of little consequence. The four general conclusions of these chemists are as follows:

First—Where there are no chlorides present the total available cyanogen is nearly all converted into hydrocyanic acid gas.

Second—When chlorides are present and the gas is generated from solid lumps a very small amount of decomposition occurs.

Third—Cyanide in solution suffers very great decomposition during generation when chlorides are present.

Fourth—The commercial cyanides now being used are good for fumigation purposes even if they contain the largest amount of common salt yet found, provided the hydrocyanic acid gas is generated by the method usually followed in practice.

When doctors disagree it is time for the layman to be careful, but we hope some very carefully observed experiments will be made which will in the course of a few months give, if not conclusive, most helpful lessons.

Agricultural News Notes of the Pacific Coast

Northern California

Sutter County's bean harvest is ended.

Last Thursday, the 19th, was wool sale day at Ukiah.

The high school at Napa has established an agricultural course.

Willits recently held a most successful four-day agricultural fair.

A Sacramento County beekeeper reports a fairly good honey season.

Santa Rosa, Sonoma County, is sending several cars of prunes to Germany.

California barley has been in greater demand by eastern brewing companies than ever before.

The Ferndale Chamber of Commerce is being urged to take up the matter of gopher extermination.

A 2000-acre tract near Badger Hill, Eldorado County, is being subdivided into 20 and 40-acre fruit ranches.

A large party of colonists recently visited Biggs, Butte County, and land will be purchased in that section.

The Sutter Drainage District has been sued for damages because of overflowing ditch drowning grain crop.

The plant introduction garden at Chico, Butte County, is making many improvements and adding new plants almost daily.

Oroville's olive crop will be the biggest in its history and the Ehmann Olive Company is putting up its finest pack of olives and oil.

Prof. Geo. C. Husmann is looking for a tract of land in the Sacramento Valley to be used for experimental planting of resistant grapes.

Shasta County's highest price for hops was given last week at 35½ cents. The crop of Twin Valley in that county will run about 70 bales.

A new forage plant introduced from the West Indies is being tested in Yolo County and is showing a ten-foot growth and fifty tons of fodder to the acre.

A new town with the distinctive name of Dairyville has been established in Tehama County. It is located in the center of a rich alfalfa section.

The secretary of the interior has released over a half million acres near Shasta National Forest and entry on these lands may be made after December 26th.

Ukiah, Mendocino County, reports the hop crop of surrounding sections harvested, and with few exceptions baled. Prices have ranged from 10 cents on old contracts to 42½.

The creamery companies of Humboldt County are making strenuous endeavors to prevent feeding of turnips to dairy cattle, as it imparts disagreeable flavor to the butter.

Horticultural Commissioner McBride of Solano County is urging eradication of thistle. It is hoped to have the services of another inspector next year in Maine Prairie Township, where the pest is most abundant.

Sugar beet planting has been engaged in in northern Solano County for the purpose of testing the soil and ascertaining the possibilities of sugar beet growing. The test is said to be in the interest of the Sacramento Valley Sugar Company.

Central California

Santa Cruz is planning to have an egg exchange.

Santa Cruz County is planning for a big tree boulevard.

Salinas recently sold 2,500 sacks of Chevalier barley at $1.72.

The Kirkman Nurseries plan the opening of new yards at Madera

A committee has been appointed to form a raisin exchange at Fresno.

Hughson shipped seventy-five cars of baled alfalfa during September.

Stanislaus County Poultry Show will be held at Modesto November 16-18.

Dairymen at Salinas have been fined ten dollars each for unsanitary dairies.

Squirrel "owners" are to be prosecuted if they do not rid their lands of the pest.

Many licenses have been taken out by sportsmen for duck hunting on Tulare Lake.

Gilroy orchardists are planning to put out many French prunes the coming season.

Three degrees of quality of cream are to be established by the dairymen of Tulare County.

Stanislaus County is urging the planting of more olives, maintaining conditions there are perfect.

The east side and west side of Tulare County are contending as to which offers the best route for the state highway.

Tulare County orange growers will ask the President to aid in securing a more definite "green orange" ruling from Dr. Wiley.

Fruit growers of Kerman have formed an association and meet regularly to discuss spraying and other cultural matters.

Tulare claims to have shipped from ten thousand to twelve thousand hogs this year to the Los Angeles and San Francisco markets.

An auxiliary reservoir for the Modesto Irrigation District has just been constructed. It is three miles wide and seven miles long.

Rangers in charge of the Sequoia and General Grant National Parks have declared war on squirrels and other destructive rodents.

At a -meeting of fruit growers at Sacramento recently the matter of uprooting many of the table grape vines of the state was discussed.

The Farmers Union and Milling Company's warehouse in Stockton is nearly finished. It will have storage capacity of 20,000 tons of wheat.

A petition has been filed for the formation of the Wilbur Reclamation District on the west shore of Lake Tulare. The district will contain about 27,000 acres of rich land.

The Tulare County citrus growers have asked for an inspector from the Department of Agriculture to determine as to ripeness of oranges before they leave the packing house:

One striking feature of the Apple Show at Watsonville was a parade of apple wagons. Seventy wagons were in line, carrying a total of 14,000 boxes. This was to represent an ordinary half day output of Pajaro Valley orchards.

Southern California

The latest town established in Imperial Valley has been named Barba.

The Walnut Growers Association of Southern California is composed of 17 affiliated associations.

An auto truck is delivering apples from the Yucaipa Valley to San Bernardino and Redlands.

A carload of registered Berkshires has just been placed on the ranch of J. F. Weaver of Imperial.

Extensive plantings will be made of olives in the Hemet-San Jacinto section during the next year.

A movement has been started in Los Angeles to secure a closed season for all deer for five years.

Cattle on the mountain ranges above Hemet are being driven over to the desert ranges for the winter.

Plans are now being perfected for the National Orange Show to be held in San Bernardino February 19-24, 1912.

Oak Glen, San Bernardino County, is elated over the winning of nine prizes at the Watsonville Apple Annual.

One olive grower at Hemet has been offered $120 per ton for all his olives suitable for pickling and $55 for oil olives.

The walnut growing counties of the southern part of the state estimate this year's returns from walnuts at $3,500,000.

San Jacinto grain growers are balancing the year's accounts and find that barley at $1.45 is an exceptionally profitable crop.

The Golden State Cannery at Ontario has finished on peaches, and is now starting on tomatoes, of which it will put up some 50,000 cans.

Two carloads of machinery have been received and will be installed in the plant of the California Eucalyptus Lumber Company at Oxnard.

Olive growing has received an impetus since the enforcement of the pure food laws. An olive grove at Hemet recently brought a thousand dollars an acre.

The Elsinore and Wildomar districts, in Riverside County, are finding olives and walnuts very profitable crops, and are planning for largely increased planting.

Lemon growers of Southern California are gathering a fund of information for the edification of congress and if possible to secure retention of the present tariff on lemons.

The walnut growers of West Covina, Irwindale, Walnut Center, Bassett and Puente have formed a pool of their 1911 crop of about seventy tons. They will sell outside of the association.

To test the keeping qualities of Muscatel grapes, an Escondido grower has shipped two fifty-pound barrels of grapes, packed in redwood sawdust, to Pasadena for cold storage until Christmas.

The biggest increase in the production of lima beans on one ranch in Ventura County is reported from Saticoy; it was 1300 sacks on the entire ranch, the average yield per acre being 45 sacks.

The Coast

Yuma, Arizona, observed Clean-up Day October 13.

There are over 20,000,000 acres of tillable land in the state of Oregon.

A poultry show will be held at Kalispiel, Montana, during December.

Something over 8,000 acres of land will be developed through irrigation near Reno, Nev.

Over 200 boosters from Canada attended the Dry Farming Congress at Colorado Springs.

With the beginning of cool weather work will be resumed on the canals and levees of the Yuma project.

An immense poultry culture project has been launched in the Umpqua Valley. 900 acres will be devoted to it.

A prune grower near Vancouver, Washington, picked twenty-four tons of green prunes from 400 trees seven years old.

The late rains over Southern Arizona have brought up a fine growth of grass in the last two weeks in valley and mesa.

Three thousand head of fine beef cattle were recently sent from Klamath County, Oregon, to Kern County, California.

The method of electing delegates to the State Grange of Oregon was changed so that every member will now have a voice.

It is now found that 500 families living on 80,000 acres of fertile land on the Salmon River in Idaho, have no title to their land.

Extensive efforts are being made by the Amalgamated Sugar Company of Utah and Idaho to encourage growing of sugar beets in Oregon.

Wenatchee, Washington, reports Winesap, Delicious and Black Ben apples will run larger crop than last year, while Jonathans are much lighter.

Farmers in Alaska claim that they are able to raise ten pound turnips as tender as apples. Carrots, celery and other crops also take kindly to Alaskan conditions.

Engineers in charge of the Klamath Irrigation Project report that the government will spend during the next year $200,000 for completing canal to irrigate Poe Valley.

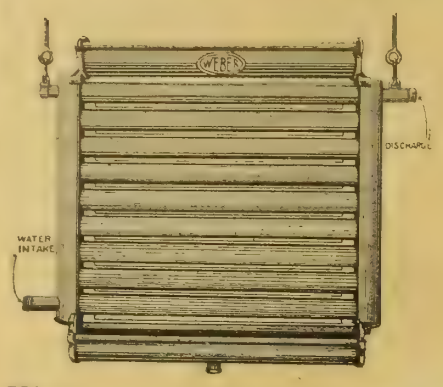
A delegate from Klamath Falls recently visited the Sacramento Valley to study sugar beet culture and has much enthusiasm for an effort at sugar beet culture in Oregon.

The National Mohair Growers Association will hold its annual convention in San Antonio, Texas, in November. The mohair output of the United States is extremely short this year.

Superintendent Carnes of the state insectary has returned from his trip to the Hawaiian Islands and reports the work of the Mediterranean fruit fly as extremely destructive to the fruits of the islands.

The state farm at West Stayton, Oregon, has been experimenting in the planting of corn and other crops in different plots, some of which were irrigated and come not. The returns are so favorable to irrigation as to be almost startling.

Weber Milk Coolers



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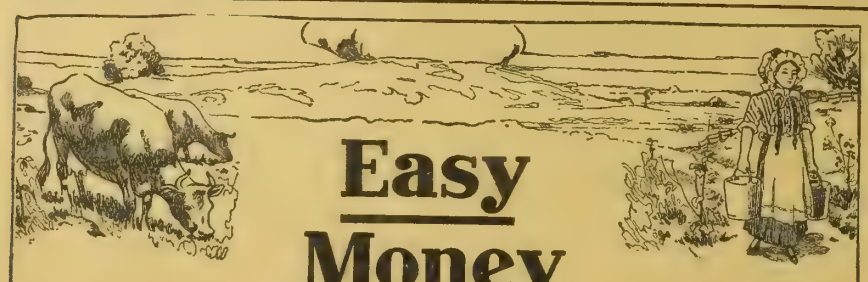

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We are blessed in this country with nature's richest gift—"Alfalfa," which we all agree is an unrivalled feed for a dairy cow—but even the best should not be used alone—cows, just like human beings, need variety. Alfalfa is rich in protein, but is light in carbohydrates. A cow, in order to make the most milk, must have in her ration a sufficient amount of both classes of feed.

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Progressive feed dealers are rapidly placing Steam-Dried Beet Pulp in stock. Ask your dealer for it. If he does not keep it, write us. We will see that you are supplied promptly.

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Dairymen and stockmen are requested to write of their experience. Mrs. Sherman is always willing to answer queries and this, with experience of other workers, will make this department of greater value.

BREEDING.

By Mrs. M. E. Sherman.

In speaking of the cows in my last article I ended with leaving out that important matter of good looks, for if a thing is good why not have it look so? Why have a sway back with a hump at the tail of a dairy cow when it does not increase the quality of the cow greatly? I have been collecting pictures of the great cows of every breed. I find that none of these things are necessary to production but are defects in the animal. The necessary things all these great cows show are the broad mouth, the big stomach, the large udder, the well-placed teats. We have our fads, all of us, and while some good authorities say that the skin of a cow or rather what is called the handle of the hide, has nothing to do with other qualities. I certainly find this hard to believe. In my cows the good feeders have shiny hair and soft feeling skins. The same is true of horses as it is of cows. The cow or horse that assimilates the food well has the smooth handling. When I go over the herd if I find a cow looking rough, I know she is wrong and give her extra feed of rich food to build her up into health.

Dry Skins.

In the sanitariums for mankind the skin of patients is examined and if it is harsh and dry, water is ordered in large quantities and watery foods. Now as long as cows receive abundant watery food such as silage, they do not have dry looking weedy hair on them. When a cow is thin the hair is dry looking. Now on old cows to hold condition, oil cake is needed in small quantities. I often take the old cows out of the herd, that is the very old ones, and put them into a small sheltered corral where they can have extra feed and more quiet. These old cows in a registered herd give us some of our best heifers. They have been tested as producers, they have been found to have the ability to handle food and stand the long strain of continued milking. They have had the ability to perform. In old age a form of mal-nutrition may be developed in a cow as in human beings. When the liver grows sluggish there is auto-infection. This reminds me of a story I heard at a dinner party the other day. We were talking of the prizes awarded to the cows at the fair the week before, when one of the men got off this story: "We had our cow do a funny thing the other day. We left a pail of gasoline standing in the yard. She tasted it, liked it, and drank it down. There was soon a wild time in the yard. The cow was galloping around yelling Honk! Honk! Honk! When we saw the empty bucket we knew she was suffering from 'auto-infection.' We could not get her into the stable, so put her into the garage and then cut a hole in her hoof to keep her quiet until the effect of the gas passed off. You see, she thought she had blown up a tire when the hoof was punctured."

Poor Sires.

The waste and loss from pedigreed scrubs of all kinds has never been so forcibly brought to mind as in the past few weeks of looking over animals at two fairs. In the herds the beef men have had more uniform animals than any other classes. The dairymen are waking up a little but are still a bit pedigree mad. I have seen a few scrub eastern bulls put over a herd of good cows. When will we use our common sense and forget to be hypnotized by performance of a remote ancestor of an animal. Have a good individual at the head of your herd. Have him with all the breeding you possibly can buy, for your money but have him good in himself first of all. It is a hard thing to say, but eastern breeders evidently think that the customers of this coast will not come back again to them anyway, so they can send them poor stuff. This is short-sighted policy and will react. What can a man think when he goes miles away from home, buys a sire and brings him over the mountain on that long tedious trip, proudly takes him to a fair and then has bulls bred by his neighbors take firsts, seconds and championships over him. It hurts that man badly, for he was probably hypnotized by a big pedigree and blinded by his own desire for something extra good. At first doubtful he at last comes to believe there is nothing better than his animal. I always pity these young breeders who are not hardened to the fairgrounds judgments. The pedigree fad is worked for all it is worth in this city.

Typical Ayrshires.—Oldhall Ladysmith, winner Asso. Cup, National Dairy Show, '10. Boghall Snowdrop, Grand Champion, '10 Show.

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A sire of exceptional merit has a string of pure-bred daughters that are performers. He also has a string of sons. The dams of these may not have been extra good cows. Now from a breeder's standpoint the grandson of this great sire from a tested daughter is more apt to be great than his own son unless that son has a dam of great merit. Here is where so many are deceived when trying to improve their herds. The son of a great producing cow is worth more than the son of a great producing sire. If one can have both sire and dam great then the transmission is as certain to follow in every physically perfect heifer as anything we know of in this world of ours.

The sires that are sent here are often a disappointment, yet many good ones do come to us. The eastern breeders are much higher in prices than the California breeders, and we naturally expect the animals to be better than the locally-bred ones. In choosing a sire it is better often to take a good individual from a neighboring herd rather than to buy one of these "degenerate sons of noble sires," and use him on the herd.—M. E. Sherman.

Judging Polytechnic Stock at San Luis Obispo.

SPANISH PEANUTS FOR SWINE.

By P. N. Flint, Professor of Animal Husbandry of Arkansas College of Agriculture.

The Spanish peanut is generally recommended as a crop for swine feeding in preference to other varieties, because of the fact that it will grow under a wider range of conditions as to soil and climate, and also, because of its upright habit of growth, which allows easy cultivation.

The Spanish peanut is small podded; bears abundant foliage, and the stems grow upright. This variety frequently yields as high as 60 bushels of peanuts per acre.

Feeding Value.

The peanut kernel is highly nutritious and rich in both protein and oil. It has a nutritive ratio of about 1 to 4.2 which shows it to be a protein feed, and therefore good to combine with corn, since the latter feed is deficient in that food nutrient. The following is an average analysis of the peanut kernel: 26.6 per cent protein, 16.7 per cent carbohydrates, and 42.0 per cent fats.

Hogs are generally allowed to gather the peanuts themselves, and they generally consume some of the vines in addition to the pods and kernels. The vines have a feeding value somewhat similar to clover hay. Peanuts are relished by swine, and, since they yield well and furnish a concentrated source of nutriment, they are well adapted as a hog feed.

Polytechnic Butter Made at San Luis Obispo State School.

Soil Preparation and Requirements.

Spanish peanuts do best on a well-drained sandy loam soil, but may be grown under a wide range of conditions. Soils that become very hard are not well adapted to peanut growing owing to the fact that the pod stems cannot penetrate the surface. A poorly drained, sour soil is also unadapted to peanut growing and where such conditions exist, air slaked lime should be sown upon the soil at the rate of 1000 to 2000 pounds per acre, and if possible the soil should be drained.

Too much stable manure produces abnormal tops, and should not be applied in very great amounts, unless it be the previous year to some other crop. If the soil is low in fertility it is ordinarily best to apply about 200 pounds of acid phosphate and 100 pounds of kanit per acre.

The peanut belongs to a class of plants known as legumes, which are nitrogen gatherers, or soil improvers. Peanuts, therefore, enrich the soil in nitrogen, and, in case they are pastured they add considerable vegetable matter to the soil.

The soil should be well prepared, and, as a rule, level culture is best. If

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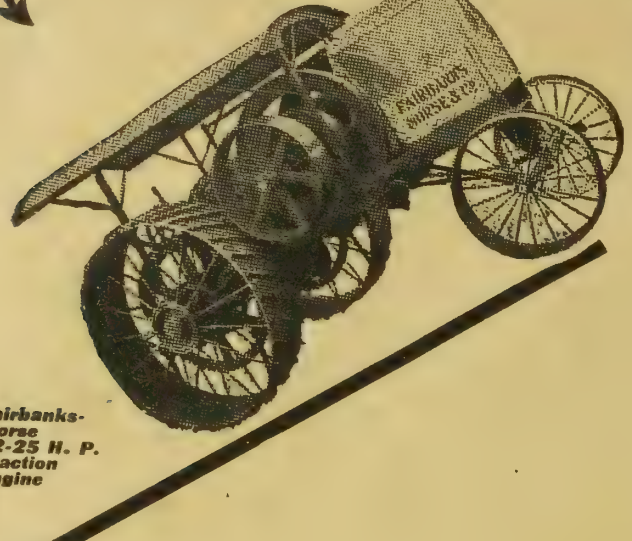

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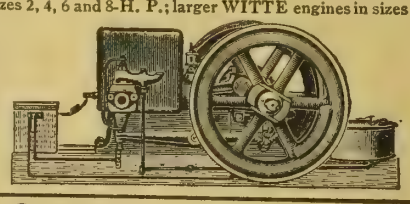

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the drainage is very poor it is sometimes best to throw up slight ridges and plant the peanuts upon them. This is especially desirable during seasons of excessive rainfall.

Since peanuts easily become weedy, it is best, if possible, to harrow the soil once per week for three or four weeks before planting so that the germinating weed soils will be destroyed. Crab grass is one of the worst enemies of the peanut.

It is best for the soil to plant peanuts in rotation with other crops. A good rotation is corn followed by peanuts and the peanuts followed by rye for winter grazing. They can also be planted after oats are taken off in June, in which case they will be ready for grazing by the latter part of September. When planted in early spring they will be ready for grazing by the first of August.

Planting.

Spanish peanuts should not be planted until the ground has become thoroughly warm. It is best to plant them in rows from thirty to thirty-six inches apart and six to nine inches in the drill. The seed should be planted about two inches deep. At the last cultivation the soil should be thrown towards the rows. They should not be cultivated after the pods begin to form.

It is sometimes customary to soak the seed over night before planting. This is done to insure quick and even germination, and is perhaps quite desirable if the ground is dry. If the soil is quite moist soaking is not so necessary. One disadvantage of this method is that the seed must be planted at once after soaking or they will spoil.

It is also quite customary with some varieties to shell the seed, but this is not so necessary in case of the Spanish variety as the pods are usually well filled and no great disadvantage results when there is more than one plant to the hill.

If shelled there should be planted from a peck and a half to a bushel of peanuts per acre, while if planted in the pods the rate of seeding should be from two to four bushels per acre. Spanish peanuts will mature in about 90 days.

Feeding Peanuts.

The best method of feeding peanuts is to allow the hogs to gather the crop themselves. This method saves the expense of pulling and hauling, and if portable fences are used so that the hogs can graze over but a small area at a time, the waste of peanuts will be greatly reduced. It is generally considered that an acre of Spanish peanuts will furnish grazing for eight or ten hogs, weighing in the neighborhood of 200 pounds, about thirty days. However this depends upon yields, size of the hogs and the quantity of other feeds fed in addition to the peanuts. For best results it is advisable to feed corn in addition to the peanuts. By so doing, not only will greater gains be secured, but a much better quality of pork will be produced than in case the peanuts are fed alone. However, if corn is quite high in price it might be more economical to produce the bulk of the gains on peanuts alone and simply finish the hogs off on corn during the last three weeks of the fattening period. When fattened on peanuts alone a soft, oily pork is produced which does not generally find high favor upon the market.

The cost of producing pork can be greatly reduced by growing and feeding Spanish peanuts.

Veterinary

Answers in this column by Fred G. M thews, M. S., D. V. M., 1233 Central A Los Angeles, are without charge. For mediate mail answer remit $1.00. In w ing questions give full symptoms or p ticulars of injury of animal.

It must be borne in mind that above noted. where immediate swers are desired by mail, $1.00 m be sent with the query, and Dr. M thews will give immediate attenti

In asking questions concerni treatment of any sick or injured a mal which will be given freely throu the columns of the Cultivator by Matthews, we ask all readers to ex cise great care in giving fullest p ticulars. The statement that a ho is lame gives nothing upon which veterinarian can formulate an inte gent answer. Give the age and s of the animal. Give the symptoms describe the injury as accurately possible. Is it of long standing a what treatment, if any, has been use Lastly, sign name to all letters. attention will be paid to them if t is not done.

Mange.

A colt, 18 months old, has the man and is in bad shape. Creolin 10 ounc in 16 pints of water has been us without success.—Subscriber, Lak side.

Scrub the affected parts with war water and soap, dry thoroughly, a apply Creolin mixed with neatsfoot in the proportion of one part of t Creolin to four parts of oil. Then r sublimed sulphur into the oil-cover surface. Repeat the treatment aft four days.—F. G. M.

Ear Ticks—Tonic.

(1) A mare has ticks in her ea Grease and sheep oil has been us but does not drive them out. What a good tonic?—Subscriber, Woody.

The spinous ear tick (Ornithodor Meguini) infests the ears of horse cattle, dogs, etc., in the southern par of California, Arizona, New Mexi and Texas, and is said to sometim cause serious injury. Mix sweet o 1½ ounces, castor oil ½ ounce an chloroform 15 drops, then shake, an pour a little into the ear. Prevent th animal from shaking its head for a fe minutes, allowing the ticks time t emerge from the oil, when they shoul be removed by inserting pledgets c cotton. Avoid the use of sheep di or other irritating remedies, unles well diluted, as inflammation thus in duced prolongs obscuring symptom

A very good tonic may be made b mixing gentian 4 ounces, nux vomic 2 ounces, potassium nitrate 2 ounces dried sulphate of iron 3 ounces an sugar 5 ounces. The dose is a mediu tablespoonful two or three times a da in the feed.—F. G. M.

Thrush.

What is a good remedy for thrush —Subscriber, Santa Barbara.

Pack the clefts and cavities of th hoof with calomel in powder or com bined with vaseline to make the oint ment. Remove all loose shreds o hoof and filth before applying th remedy.—F. G. M.

Slobbering.

A mare, 13 years old, and fed lib erally three times a day, continues i an unthrifty condition. I had her teet filed about three months ago. She slobbers all the time while eating What is the trouble and the treat ment?—Subscriber, National City.

Request some qualified veterinarian to examine carefully for decayed, loose or split molar teeth.—F. G. M.

Profit in the Poultry Yard

ractical poultry people who may have as from their experience as to methods feeding and housing and general care of try will confer a favor upon the Culti- r and its circle of readers by sending oncise accounts. Mrs. Basley is always ng to answer queries, which with the erience of others should make this a st valuable feature in poultry life on the st. Opinions or matters of a personal ure should be omitted, but a concise tement of facts is always valuable.

AKLAND'S BIG POULTRY AND PIGEON SHOW.

The Alameda County Poultry Asso- ation will hold its eighth annual ex- bition in Oakland, Nov. 21st to 27th, 11. The coming show will eclipse former exhibitions. The associa- on this year offers handsome useful ophies such as solid silverware, high ade cut glass, hammered brass and milar articles. This will be a de- ded change from former years and ill surely meet with the approval of . Specialty judging will be a feat- re, as each judge employed is an xpert in the classes he has been as- gned. The awards will be placed by arry H. Collier, of Tacoma, Wash., . J. Venn of Fresno, and L. N. Cob- edick of Oakland. With the three dges all awards will be placed be- re the end of the first day. The hibition hall is an ideal one, being cated at 1250 Webster street, right the business district, containing 2,700 square feet, giving ample room r the combined exhibitions of the lameda County Poultry Association nd the California Pigeon Club, there- y giving the public two shows for ne price of one. The officers of the oultry Association who will have harge of the coming show are W. E. ibson, president, Jas. Stansfield, vice resident, C. E. Ross, superintendent, nd W. T. Frost, secretary, 2821 Thir- enth Avenue, Oakland. Copies of the 2-page premium list will be mailed pon request by the secretary.

MODESTO POULTRY SHOW.

Modesto, county seat of Stanislaus County, will have its first poultry how, Nov. 16-18, 1911. The above- named county has climbed from four- eenth place to first, in the dairy busi- ess in seven years, and Secretary J. W. Guyler of the Poultry Association, ays they are going to duplicate that erformance regarding the raising of oultry. He states that the whole country is excited over the work, and hat the field is virgin for those who nay have good stock or fine hatching eggs for sale.

On account of their abundant field, excellent markets and rapid settle- ment of small acreages, the outlook is bright, indeed, for the future.

Secretary Guyler will be glad to send premium lists to those interested.

RECREATION CENTER.

The supreme concern of the com- munity, whether of the crowded city or the country crossroads, should be to supply youth with wholesome enter- tainment under wholesome environ- ment. Our school system offers the opportunity. Every school should be a recreation center. It should have ground for baseball, football, tennis and outdoor sports. The building should have a hall, furnished with chair for lectures, stage for plays and moving pictures, good floor for danc- ing, and music, a pianola and a graph- ophone. The cost? Do we not pay out for courts, reformatories and pris- ons more than would support these recreation courts? And who can measure the price of one youth gone wrong?—La Follette.

CALIFORNIA POULTRY SHOWS.

Stockton.—Nov. 7-11, 1911. San Joaquin County Poultry Association. Wm. H. McKay, secretary, Stockton, Cal.

Modesto—Nov. 16-18, 1911. Modesto Poultry Association. Will Guyler, secretary.

Oakland.—Nov. 21-27, 1911. Alameda Country Poultry Association. Wm. T. Fros, secretary, Oakland.

San Diego.—Nov. 28-Dec. 2, 1911, San Diego Pigeon and Pet Stock Club. H. J. Gottesburn, secretary, Coronado.

Corning.—Nov. 29-Dec. 2, 1911. Corning Poultry Association, E. L. Randall, secretary, Corning.

Escondido.—Dec. 6-8, 1911. Escondido Valley Poultry Association. B. V. B. Lincoln, secretary.

Petaluma.—Dec. 6-9, 1911. Petaluma Poultry Association. H. R. Campbell, secretary.

Napa.—Jan. 4-6, 1912. Napa County Poultry Association. Wallace-Rutherford, secretary.

Oroville, Butte County, is getting ready for its annual citrus show.

The express monopoly was never so beset from all sides. To the activities of the government and of the interstate commerce commission are being added the efforts of numerous organizations of business men and of other classes. The railway commissions of the different states are also taking up the question and will consider a general lowering of rates in the various states with an idea of securing some uniformity of action and perfect fairness to the express companies as well as to the public. A committee appointed by the railway commissioners is preparing a report showing that the value of the property used by thirteen leading express companies was only 12 per cent of their total assets, the other 88 per cent being surplus wrung out of the public through high rates. The net operating revenue of the express companies, even then, is 51 per cent on the value of the property and equipment. The more the express monopoly is investigated the more the average citizen wonders how it has escaped supervision all this time during which the railways, gas companies and other public service corporations have been so closely looked after that it has often been hard for them to earn a reasonable income.—American Cultivator.

TANNING WITH WOOL ON.

The following recipe for tanning skins with the hair, wool or fur on, will be of service to readers:

While the skin is fresh powder the flesh side with a mixture of salt two parts, alum and saltpeter each one part, and roll tightly, letting it lie until the mixture is thoroughly dissolved. This mixture should be pulverized before being applied. Next stretch the hide on a board and scrape off all flesh or membrane that may adhere to it. Dry in the sun and cover with neat's foot oil, after which it should be laid away for a few days. Then scrape as clean as possible with a piece of wood and apply Spanish whiting, which has been heated in an oven until it is hot, rubbing it with a flannel cloth. The skin is now ready for use and if at all stiff may be rubbed and worked soft with but little trouble.

(1) Cover the flesh side of the skin with pulverized alum, roll up for four days, then rub dry, with pulverized chalk. (2) Make a pickle of one gallon of water, one pound of salt, one pound of alum and a quarter of a pound of blue vitriol. Keep the skins in this in a warm place one week; then pull soft while drying.—Ex.

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We'll Get You Yet
We'll Sell You Proper Poultry Food
Modern poultrymen realize that to be successful the best and most nutritious food must be given to their flocks, from the little downy peeper to the laying hen.
It isn't a question of choice. It isn't a question of whether you want to or not. It is just necessity in meeting modern conditions.
We Meet This Condition By Furnishing Food That Gives Results
Our chick food will keep your chicks well and growing and enable you to have a greater number than upon any other food on the market. Our egg food gives your hens material for egg production. Cresoline is sure death to mites and other noxious bugs. Coulson's Insect Powder will free your flock from body sucking parasites.
Are You In Touch With Us?
If not, we want you to join our army of successful poultry raisers. They are successful because they adopt right methods in feeding and care.
We publish several booklets which will interest you. They may be had for the asking.
You can get our foods from any reliable poultry supply house. Insist on getting them. Look out for substitutes said to be "just as good," "practically the same," etc. Any dealer who tries to sell you an inferior food when you ask for Coulson's is not your friend.
Coulson Poultry and Stock Food Co.
PETALUMA, CALIFORNIA
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Bulbs and Seasonable Seeds

Our importation of Dutch Bulbs has arrived. This stock is the very best, and our prices are low. Come and see the display or send for free Catalog at once. Also for our large Seed Catalog, if you haven't one.

Incubator Bargain

Even if you don't want one for four to six months, you can save 25 per cent by buying now. A special offer for cash, and to make room. 50-egg size only. Send for Catalog and particulars. Big bargain. Strong guarantee.

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ADVANTAGES OF HAVING GOOD POULTRY.

Entirely too little attention is given to selecting poultry for general use. One might read an article that lauded the Plymouth Rock or Orpington fowls, and from that might decide to have some of that breed. The fowls are procured and turned loose on the farm to mix with those already there, which may be Rhode Island Reds, Wyandottes, etc., and the result is that the stock is poorer than ever before. Those who keep poultry on farms, or elsewhere, should keep them separate during the breeding season and not intermingle or cross-breed one variety with another, except to produce market poultry, and in such instances all the cross-bred fowls should be sold to market and none kept for breeding.

More attention should be given to poultry on farms than elsewhere. Some may say that they do not care to breed exhibition poultry, but it will always pay the farmer to breed his poultry just as carefully as fowls can be bred for exhibition. It is not necessary to spend large sums of money for prize winning fowls, nor to keep the poultry on the farms in the same way that they should be kept for exhibition, yet the poultry should be cared for and properly housed, because such care will bring good returns.

An instance of this kind occurred during the past season. One who had kept poultry for about 20 years, became interested in the subject of proper breeding. Over a year ago he bought a thousand day-old chicks from which he reared and selected 460 pullets. He sold all his other fowls, and from each of these 460 pullets more than $2.00 worth of eggs was sold during the months of December, January, February and March, making 50 cents a month from each hen. These results were so satisfactory that the farmer has made arrangements to have 1200 laying hens and pullets and has his house now completed and the pullets almost ready to go into them. His statement is that when a man knows how and applies his knowledge to poultry growing, he can easily make more than $2.00 a year net from each hen.

Another feature for consideration is the color of the egg shell. If your market demands white-shelled eggs, select fowls that lay white-shelled eggs; if your market is suited with tinted or brown-shelled eggs select fowls that lay eggs with tinted shells. Always select the fowls from a true bred variety and keep them pure and true.

If you want to keep fowls that lay white-shelled eggs and those that lay colored-shelled eggs, select two varieties, and breed them separate or separate enough of each to lay eggs for hatching and hatch and keep the chicks separate. Never mix varieties to produce offspring for laying eggs, or for market.—Poultry Item.

SATISFIED HER.

"Pardon me," said the haughty lady on a marketing expedition, "but are these eggs fresh laid?"

"Absolutely, madam," replied the grocer promptly. "The farmer I purchased those eggs from won't allow his hens to lay them any other way."—Calais, Me., Advertiser.

See that the chickens are not overcrowded at night, for they sometimes get hot and sweaty, and when let out in the morning catch cold, which develops into roup.

EGG EATING.

In my long experience with hens I never had but two experiences with the egg eating habit. Invariably I planned to keep my fowls busy and thus out of mischief and bad habits. But the habit developed twice in my flock in spite of every precaution I had taken. No poultryman of any extended experience but what has had to deal with this pernicious habit.

There are many causes that bring about egg eating and it may be well to enumerate some of them before my remedy is stated.

Lack of sufficient exercise where fowls are compelled to idle about and perhaps run back and forth over the nests, finally break an egg, eat it and with the delicious taste still with them proceed to eat the rest of the eggs in the nest and devour them as fast as they are laid every day.

Crowded quarters with too many fowls in one pen.

Hens and pullets in the same pen, wrere the hens are cross to the pullets and they seek refuge in the nests, break an egg and the mischief commences.

Fowls that are so fat that they lay soft shelled eggs that are easily broken.

A setting hen that remains on the nest when other hens are laying in the same nest may start the sin, for the combined weight of several fowls is apt to break an egg and the habit is formed.

Fowls that are underfed and half starved pick at anything that looks eatable, break an egg and the deed is done.

The lack of oyster shells or grit is a sufficient cause.

The lack of animal food causes the fowls to crave for something, they know not what, until an egg is eaten and the appetite is formed.

One or several hens or maybe the whole flock will become involved in the habit.

What is the best remedy is the question. I have tried several but this following always proved to be a sure cure:

Take an egg, puncture a hole in one end about the size of a ten cent piece, at the other insert a darning needle. With the lips pressed against the smaller aperture blow out the contents of the egg into a cup. Mix the contents thoroughly with pepper, either black or cayenne, into a doughy mass, and with the aid of a small funnel or spoon put this mixture back into the egg. Seal over the apertures with something that will prevent the mixture from coming out and deposit the egg in the hen house, it matters little whether it is in the nest or in the litter on the floor of the house. The outlaw, or outlaws, will soon find it. A few good mouthfuls of the mixture is sufficient to cure this evil habit for all time. If it fails, every other remedy will fail save the axe remedy, and this should be applied as a last resort.—Successful Farming.

For an article which seems well protected from odor and gases, an egg is extremely sensitive to them. Eggs should be kept in a cool atmosphere; also, when kept longer than a week, should be turned frequently. When an egg rests in one position too long the yolk sinks to the bottom of the shell, the air will work through the pores of the shell, attack the animal matter, and decay sets in. The turning of the eggs has been found the most practical method of avoiding this decay.

EGGS AND THEIR USES.

A Michigan woman who won a prize for writing the best article on eggs succeeded in giving some very interesting information, as will be seen in the following extract:

"The yolk of an egg alone is the better for invalids, and will be frequently relished when the white would be rejected. When cream cannot be procured for coffee, the yolk of a soft boiled egg is a very good substitute.

"To prevent the juice of fruit pies from soaking into the bottom crust, wash the crust over with a beaten egg before putting in the fruit.

"When making frosting in warm weather, set the whites of the eggs on ice for a short time before using. If the eggs you have to use for frosting are not quite as fresh as you could desire, a pinch of salt will make them beat stiffer.

"The white of an egg, an equal quantity of cold water, and pulverized sugar sufficient to make it the required consistency, make a frosting which is very nice, and, as it requires no beating, is very easily made.

"When beaten eggs are to be mixed with hot milk, as in making gravies and custards, dip the hot milk into the beaten egg a spoonful at a time, stirring well each time, until the eggs are well thinned, then add both together; this will prevent the eggs from curdling.

"It is often a question what to do with either the whites or yolks of eggs which are sometimes left over after making a cake frosting and so forth. Either will keep well for a day or two if kept in a very cool place, the yolks well beaten and the whites unbeaten. Whites or yolks of eggs may be used with whole eggs in any cake or other recipe calling for eggs, counting two yolks or two whites as one egg.

"When eggs are cheap or plentiful in summer, wash all those used in cooking before breaking. Save the shells, and when a quantity are dry, crush them where they will dry quickly, and when thoroughly dry put in a thin cotton bag and hang in a very dry place. In the winter, when eggs are scarce and dear, a tablespoonful of this mixture put in a cup, a little cold water poured over it and left to stand over night or for half an hour or so in the morning before breakfast, will answer every purpose of a whole egg in settling coffee.

"Egg stains can easily be removed from silver by rubbing with a wet rag dipped in salt.

"To clean vinegar bottles and cruets, crushed egg shells in a little water are as good as shot, besides being healthier and handier. To mend broken china, use a cement made by stirring plaster of Paris into the white of an egg.

"An egg well beaten and added to a tumbler of milk well sweetened, and two tablespoonfuls of best wine, is excellent for feeble, aged persons who can take little nourishment.

"Eggs are valuable remedies for burns, and may be used in the following ways: The white of the egg simply used is a varnish to exclude the air, or the white beaten for a long time with a tablesponful of fresh lard, till a little water separates, or an excellent remedy is a mixture of the whites of eggs with glycerine, equal parts put in a bottle and cork tightly; shake before using. It will keep for some time in a cool place.

"For inflamed eyes or eyelids, use the white of an egg beaten up to a froth with two tablesponfuls of rose-water. Apply on a fine rag, changing as it grows dry; or stir two drams of powdered alum into the beaten whites of two eggs till a coagulum is formed. Place between the folds of a soft linen rag and apply to the eyes.

"For a boil, take the skin of a boiled egg, moisten it and apply. It will draw off the matter and relieve the soreness in a few hours. To cleanse the hair and promote its growth, rub the yolk of an egg well into the scalp, and rinse out thoroughly with warm water."

ABOUT GEESE.

Best keep goslings out of water until they have a full coat of feathers. Have dry, warm quarters for them at night and keep them confined in the morning until the grass has dried off. The goslings need to be looked after when a heavy shower comes up as they will drown if their backs are allowed to get soaked through. The baby down quickly becomes soaked with water which the young gosling can not shake off.

The old geese do not require any feeding during the summer, but will live on weeds and grass, if they have plenty of water. The only time geese need to be given grain is in winter.

No expensive yards or houses are required for geese. A three-foot wire netting fence will hold them in a yard and an open shed will provide sufficient shelter.

The feathers of geese are an important source of revenue, and always find a ready sale at from 50 to 75 cents a pound. Young geese will be ready to pick when the feathers are what is called ripe. This can be ascertained by examination. At the proper time there will be no blood in the ends of the quills and the feathers will come out easily. When this stage is reached the birds will begin to drop their feathers over the yards. Pick regularly afterwards, about every six weeks. A full grown goose should yield about one pound of feathers in a season. They should not be plucked during the winter.—Successful Farming.

According to a large number of analyses made of domestic eggs at the various agricultural stations, an egg weighing two ounces has the following percentage of composition: Protein, 13.4; water, 73.3; fat, 10.5; and ash, 1. A side of beef contains on an average about the same percentage of protein but a larger percentage of fat. Eggs belong to the nitrogenous group of foods, and would naturally and quite probably be combined in the diet with material supplying carbohydrates (sugar and starch), such as cereals, potatoes, etc.—Coleman's Rural.

The flock should be carefully culled late in the summer or early in the fall, and all useless old hens, surplus cocks and cockerels not wanted for breeding another year, runts and unpromising youngsters, sent to the market, after being thoroughly fattened and finished. The sooner these birds are disposed of the better it will be for the balance of the flock.

"How is it your hens are so prolific?"

"I feed them on layer cake."—Lippincott's.

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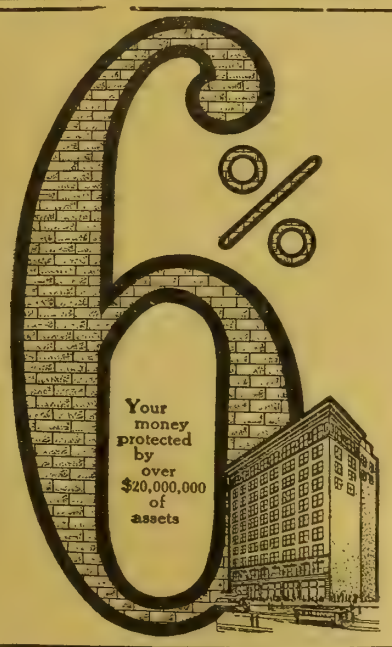

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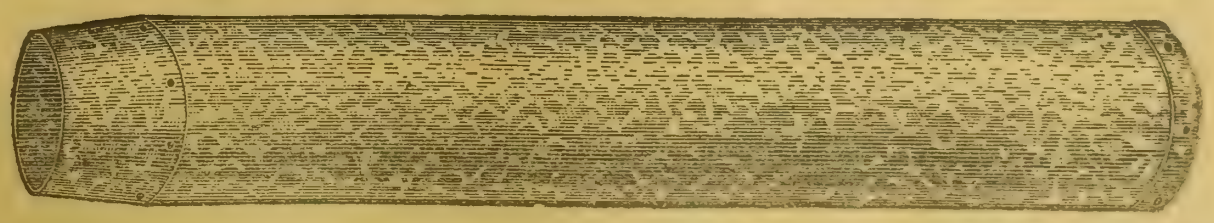

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We have now five choice young registered Holstein bulls for sale. Handsome fellows. Stock of our breeding won at the fairs all over the state. Juliana De Kol was champion at Sacramento. Most of these bulls are either sired by her brother or are out of her sisters. M. E. Sherman, Minnewawa Stock Farm, Fresno, Cal.

Percheron Stallion For Sale—A registered, two-year-old, black Percheron, sound and gentle, weighs now 1650. Will deliver him at your town for $1000. He will pay for himself first season. Address Chas. F. Thompson, R. F. D. 3, Bakersfield, Cal.

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Three Half Bred Toggenburg Swiss Milk Does, sired by "Bismarck,' also one three-quarter bred doe kid, 6 months old. Price $20 each, or $75 for all. Full description on application to W. E. Hyer, Hemet, Cal.

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Imported Swiss Toggenburg Buck "Chieftain." Service fee reasonable. Bred grade does for sale. L. C. Buhl, Pomona, Cal.

For Sale—Shorthorn bulls and Berkshire hogs. Bred for size and quality. H. L. Murphy, Perkins, Cal.

Berkshire Pigs, all ages and both sexes, for sale. B. de Groot, Aptos, Cal.

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Poultry Expert—German, 40 years, 15 years' experience in Eastern states. Had two large poultry farms of his own. Seeks position on a poultry farm to study conditions, etc. Can start to work at once. Address William Heck, 5409 Bishop St., Chicago, Ill.

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Grafted Walnuts on Cal. Black Root—Franquette, Mayette, Concord, Placentia Perfection, San Jose Mayette, fine stock, true to name. Also Bartlett Pear, Imperial Prune, Apricot, and a complete line of other stock. Santa Clara Valley Nurseries, Gilroy, Cal.

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Fine Line of Navels, Valencias and Eureka Lemons for delivery spring of 1911. Contract now and get the first choice. The King Citrus Nurseries, Whittier, Cal.

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For Rent—On shares, 37 acres of fruit and 8 acres of vines. Only man of experience need apply. D. F. Conant, Box 64, Route 5, Modesto, Cal.

Pasture to Rent—3,000 acres. Good stubble and wild feed. See R. Phillips, P. O. Santa Ynez, Cal.

SEEDS AND PLANTS

Berry Plants and other good things for the garden and farm. My new catalogue is just out; send for it now. Louis F. Scribner, Pasadena, Cal.

California Black Walnuts for Seed—From the finest trees in state; large or small lots. Santa Clara Valley Nurseries, Gilroy, Cal.

DUCKS

We have a few genuine "Rankin" strain Mammoth Pekin drakes to spare that will add a pound each to your next lot of ducks. Grand big fellows, fit to show. Price two to five dollars each. Eggs from our best pens, $10 per hundred, $2 setting. Long Beach Poultry Ranch, Long Beach, Cal.

Indian Runner duck eggs from stock carefully bred for heavy layers. Price $1.50 per dozen. Drakes for sale. Mrs. Fred Chester, Santa Rosa, Cal., Route 2.

Choice Fawn Indian Runner drakes for sale at $1.25 each. Order now. C. A. Patterson, R. F. D. No. 2, Kerman, Cal.

MACHINERY

For Sale—Second hand windmills, tanks, pumps, engines, farm machinery.
OUR SPECIALTY—NO WORRY.
MATERIAL GUARANTEED.
WINDMILL OUTFITS.
Fine stock 8, 10 and 12 ft. steel mills with or without tanks at about half price.
ENGINES.
1½ H. P. Fairbanks, $47.50; 4 H. P. Holly, $48; 6 H. P. Coffield complete with centrifugal pump and pipe, $195. 6 H. P. Fairbanks; 22 H. P. Foos, $390; 10 H. P. steam engine, $45; 2 H. P. steam engine and boiler; 8 H. P. boiler.
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All kinds and sizes of second hand and new tanks, from 50 to 50,000 gal. Save you half and guarantee them.
FARM MACHINERY.
Walking and riding plows, Fresno, slip and wheel scrapers, spike tooth, spring tooth and disc harrows, mowers, two horse tree sprayer, Delaval cream separator, dry washer, seed sower, fruit crusher.
WAGONS, BUGGIES, HARNESS.
Outside shipments receive personal attention. Prices very lowest good serviceable material can be furnished for. Get others' prices, then compare material and prices with us.
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For Sale—One 32 H.P. Fairbanks-Morse gasoline engine; one 16 H.P. Lozier; one 9 H.P. Foos. Are in excellent condition. Our guarantee will protect you in the purchase of any second-hand engine we offer for sale. Bailie & Brandt Co., 943-945 N. Main St., Los Angeles, Cal.

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For Sale—Agricultural implements, vehicles. Splendid values, lowest prices, liberal credit. See us without fail before buying. Catalogs mailed out of town customers. Write us describing what you wish to buy. When in the city a personal call will show the largest stock and assortment in the Southwest. Arnott & Company. Established 1892. 112-118 South Los Angeles Street, Los Angeles.

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Plants of all kinds, wholesale and retail, at Las Palmas Greenhouses, Palo Alto, Cal. Contracts solicited. Let us know your needs at once.

POULTRY

The Goodacre Strains—Get your order in for 100 R. I. Red chicks at $12. Buff Orpington and Ancona chicks now 14 cents each; prices will soon advance. Some grand values in Buff Orpington hens at $2 each, males $6 and up. Utility pen of Anconas for $12. White Leghorn hens and pullets, $1 each. We are about sold out of R. I. Red males. A fine trio of White Runner ducks for $12. Three more blue ribbons at San Jose show. Don't you want to become another of our satisfied customers? Goodacre Bros., Compton, Cal.

How to Make Money—Mrs. A. Basley's Latest Poultry Book is without exception the most wonderfully complete manual on the subject of successful poultry management ever written. The secret of how to raise every turkey hatched and the "Basley Formulas," now published for the first time, are worth many times the price of the book. The "Western Poultry Book" is a practical book by a practical woman. Price $1. Address Mrs. A. Basley, Box 77, Venice, Cal.

Standard Poultry Yards—Are booking orders for eggs from the best Cook or Kellerstrass White Orpington chickens on earth, from $2.50 to $5.00 per setting and from $15.00 to $30.00 per hundred. Baby chicks 50c each. Six-weeks-old chicks $1.00 each. E. C. Worden & Son, 4004 University Blvd., San Diego, Cal.

See Here. If you want some of the best stock in this world, we have it. All thoroughbred S. C. R. I. Reds, Black and White Minorcas, Crystal White and Black Orpingtons and Barred Rocks. Orders filled as catalogued. Baby chicks, hatching eggs, cockerels, and a few pens. Address, Monte Rio Poultry Yards, Newcastle, Cal.

For Sale—Pullets, cockerels and yearling White Orpingtons (Cook strain), Black Minorcas (Northrup strain), White Minorcas, R. I. Reds (Tompkins strain), pure bred. C. U. Chamberlin, Los Gatos, Cal.

Day-Old Chicks, Barred Rock and White Leghorns, good laying strain. Order now to insure early fall delivery. The Fairmount Hatchery, 29 B Rural No. 1, Santa Cruz, Cal.

Poultry Wanted—We pay the highest market price for all the local poultry we can get, no matetr how large the quantity; also fresh ranch eggs. We remit immediately. Allaway & Layton Co., 607 E. Third St., Los Angeles, Cal.

Rose Hurst Pure Bred Poultry Farm—Bourbon Red turkeys, Mammoth White Pekin and Indian Runner ducks, S. C. R. I. Red chickens. Mature stock, eggs and baby chicks for sale. Write for prices. Mrs. Belle Goss, Madera, Cal. R. R. No. 1.

Orpingtons—High class Buff and White. Bred to lay from prize winning stock. 500 pullets and cockerels for sale. Reasonable prices. Will mate pens with unrelated males. Write Mrs. S. Swaysgood, Route 1, Healdsburg, Cal.

For Sale—Choice Ancona cockerels, fine dark birds, price $2.50 to $5. Also breeding pen of Superior White Rocks, price $10; male bird alone worth that. M. C. Shorey, Box 639, Colton, Cal.

My Hens Sleep All Night—Nothing to do but lay next day. I use guaranteed mite killer, and say, it costs less than three cents per gallon. Printed formula 25 cents. E. de Long, Box 174, Redondo, Cal.

Just Hatched White Leghorn Chicks every month, from select, heavy laying, mature stock. No pullet eggs used. Lodi Hatchery, E. Elm St., Lodi, Cal.

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Very fine strain Barred Rock cockerels. Now booking orders for baby chicks and eggs; also S. C. R. I. Reds, headed by my $50.00 male to special high-class females. R. B. Sherman, Newcastle, Cal.

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For Sale—Barred Rock Cockerels about six months old, also day old chicks hatched to order. Enoch Crews, R. No. 1, Santa Cruz, Cal.

For Sale—Light Brahmas, fine stock. Also booking orders for eggs in season, $1.50 for 15. H. Koopman, Downey, Cal., Ranch 1000 feet southwest of S. P. depot.

Barred Rocks Exclusively—Some fine cockerels for sale. Now booking orders for hatched chicks. Eggs for sale. Write for prices. G. L. Hawley, Madera, Cal.

The Luedkes—Incomparable R. I. Red high record layers. Eggs by the hundred $6.00. Fancy matings $3.00 for 15. P. O., Anaheim, Route 1.

Rose Comb Black Minorcas, nine years line bred. Stock and eggs in season. Eleanore Minorca Farm, R. D. 1, Los Angeles, Cal.

Barred Plymouth Rocks—The kind that "win and lay." Eggs and stock for sale. C. H. Vodden, Los Gatos, Cal.

Kellerstrass Crystal White Orpington Eggs, $2 per 13. R. L. Warren, National City, Cal. R. D. 1.

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Unlisted property, to which we give our personal attention. List it with us if you want quick money.

We have for sale improved farms and ranches in all parts of California. If you want to buy or trade, write us, giving details as to location wanted. We make a specialty of financing water projects.

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For Sale—Beautiful thoroughbred Bronze turkeys for breeding purposes. Get off car at Mayflower. Mrs. J. R. Cutting, 301 Violet Ave., Monrovia.

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For Sale—Mammoth Toulouse geese, S. C. R. I. Reds and Brown Leghorns. Write for prices. Fowler & Masterson, Duarte, Cal.

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Wild Plant Improvement Gardens, Santa Ana, California. Newton B. Pierce, proprietor. Rare choice ornamentals and new fruits from all lands.

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80 FINE DAIRY COWS

At 10 O'clock A. M.

MONDAY, OCT. 30TH,

On Durey Lane and Tweedy-Abbott Road, One Mile East of

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Take Santa Ana electric cars to Polamar Station—Teams in waiting. This herd consists of

80—FINE DAIRY COWS—80

80 head of Fine Dairy Cows—Jerseys, Holsteins and Durhams—all large, fine individuals, young and in first-class condition; large, heavy milkers; in fact, one of the best dairy herds in Southern California.

25 head of the above will be fresh before day of sale and giving large quantities of milk. 32 head of the above are heifers with second calf. 17 head are now dry and will be fresh within 30 to 60 days.

The owner has selected this stock from the best herds in Southern California, and dairymen looking for strictly first-class stock should not fail to attend this sale. These cows are milked daily at 3 p. m. and prospective purchasers are invited to visit ranch prior to sale and see them milked.

1 three-year-old Holstein Bull.

TERMS—$100.00 and under, cash; over that amount one-third cash, balance 6 months' time with note and approved security and 8% interest. 5% discount for cash on time sums. Arrangements can be made to purchase cows at this sale on monthly payments if desired. Mr. Bacon is retiring from the dairy business and closing out his entire herd, and has instructed us to dispose of every animal on above date

Positively Without Limit or Reserve.

Good Free Lunch at Noon.

Don't miss this genuine closing out sale.

M. Bacon, owner.

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Phones: Main 1259, F1259.

ASBESTOS ROOFING.

The satisfactory result of building construction is dependable to a great degree upon wearing, fire and water-proof qualities and up-keep of roofing. The selection of a roofing which will not be too expensive in price, and yet wear for years without painting or graveling and furnish absolute protection against fire and climatic conditions, has always been a study of considerable moment to engineers and contractors.

That greatest of all asbestos product manufacturing concerns in either America or foreign countries, the H. W. Johns-Manville Co., has the question and problem of asbestos roofing down to a science.

The asbestos used in these roofings is procured in mines owned by the Johns-Manville Co. and the fiber is specially prepared by their own experts and by their own particular process.

"J-M" Asbestos Roofing is designed either for use over boards or concrete. While formerly asbestos roofings were laid with copper flashings, by the "J-M" process the entire roof, including flashings and gutters, can be laid with the asbestos roofing.

THE NEW STYLE WAGON.

The spring bolster wagon, that is advertised on the last page of this issue of The Cultivator is the first really intelligent effort on the part of local manufacturers to meet the demands and the requirements of the California farmer.

The crops and climatic conditions of this coast are so different from what they have in the Eastern states, that they require different tools to handle them, and this is as true of a wagon as it is of many other implements.

For some reasons, the Eastern manufacturers have never recognized this fact, but have continued to sell on this coast the same gear that they sell in their own country.

The firm making this gear has been in the implement business for the past 13 years, and their retail branch—The Woodward Company—is favorably known all over the state.

There is no reason why anyone should hesitate to take their guarantee at its face value—backed, as it is by their big shops, large capital and record for fair dealing. Write for the booklet which describes this gear.

"Yes, Grandma, when I graduate I intend following a literary career—write for money, you know."

"Why, Willie, my dear, you haven't done anything else since you've been at college."

Questions and Answers

THE EDITOR AND STAFF

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper, and sign full name and address. Unsigned communications receive no attention.

White Hogs.

Will white hogs do well in California? Is it advisable to raise stock and sugar beets this winter?—Subscriber.

White hogs are said to be more subject to sunburn and skin diseases that spring from it in hot climates. They certainly have been introduced time and again here in California and disappear before the black hog. It is hardly necessary to repeat these experiments at this day, for in all warm countries the black hog is the one that thrives best. Sugar beets are always good to have to feed, as well as the larger stock beets. A little care will grow the better vegetables. China Sam uses the lengths of the woven lath fences nesting the top edges together in tent fashion, then stands palm leaves against that to protect the delicate vegetable from the frosts. He removes the leaves in the day time. On some he has barley sacks for covers. It requires little protection to keep tomatoes until after Christmas in the garden here. —M. E. S.

Registering Holsteins.

What color markings are necessary for Holsteins? Can an animal with black legs be registered?—Subscriber, Lindsay.

At the last meeting of the Holstein Friesan Association meeting it was decided to bar from registration all animals that were not black and white. Any animal having red or gray or any other color was not to be registered. None having black on legs at the hoofs or broken black spots on the legs below the knees, or animals having black switches to their tails. All white is also barred.—M. E. S.

Bleaching Walnuts.

Kindly give formula for bleaching walnuts.—Subscriber, Pasadena.

The usual method followed in bleaching walnuts is simply use of five per cent solution of salt in water, treated with strong current of electricity which decomposes the salt and releases the chlorine, which in turn acts on the nuts, similarly to the old chloride of lime mixture. This electrical method is said to be the best and is now being used in nearly all the walnut packing houses. The old method employed a solution composed of 6 pounds chloride of lime, 12 pounds sal soda, 50 gallons of water with addition of 1¼ pounds of 50 per cent sulphuric acid added after mixing other components. In this solution nuts are dipped for a minute, then dried and shipped. This latter method has been patented and after extensive law suits the Anderson, Barngrover Company has secured injunction against use of the process without permission.

Fertilizing Walnut Grove.

I want to put lime on my walnut grove this fall and fertilize in the spring before plowing with sulphate of potash and bone meal. Will it be harmful to use lime and then bone meal as above? Which is to be preferred, burnt lime or ground unburnt lime?—Subscriber, Orange.

We do not believe there would be any objection to the plan suggested, though some prefer in place of the bone meal, superphosphate. If lime is applied, it is seldom necessary and we would prefer the ground lime rock unburnt, but if the burnt lime is used, be sure it is thoroughly slaked, for if applied fresh it is too caustic and may injure the soil.

(Continued on Page 406.)

THE ANTI-SMUT CAMPAIGN.

The loss to farmers of the wheat belt in Washington, Idaho and Oregon from smut in the wheat crop of 1911 is estimated by the Chief Grain Inspector of Washington to amount to $7,000,000. This enormous loss has led to the organization of a definite "Anti-Smut Campaign." The leaders in this movement recently met in convention at Pullman to discuss the situation and to plan for a systematic campaign of education, experimentation and organization to eradicate this costly pest. As a result of their deliberations, the following conclusions were reached:

The increased prevalence of smut is due largely to the increase in acreage of fall-sown wheat, as fall-sown grain is more susceptible to the disease than spring-sown, but spring grain is not entirely free from the trouble.

Smut infection comes mostly from smutty seed, but weather and soil conditions influence the amount of infection, and there is a possibility of infection from smut in the ground if very smutty grain has been recently threshed near by.

Solutions for treating seed wheat would be carefully made in certain definite proportions. Some wheat growers have been successful while using haphazard methods, but they are men whose long experience enables them to "guess" very accurately the strength of solutions used. Safety lies in exactly measured strengths.

The strength of vitriol solutions is one pound of vitriol (copper sulphate or "bluestone") to five gallons of water. Wheat should be soaked in this solution for not less than ten nor more than fifteen minutes. Some successful farmers have used as strong as one pound vitriol to two and one-half gallons of water, soaking not more than ten minutes, without serious injury to the wheat. Too strong solution or too long soaking will kill the wheat.

Formalin should be used one pound to forty-five gallons water, the wheat thoroughly wetted by dipping or sprinkling, then covered with wet sacks for two hours, then either seeded at once or allowed to dry thoroughly.

Unbroken smut balls must be removed from seed wheat, as no method of treatment destroys the germs in these balls, and if later broken in the seed wheat they infect the grain.

Experiments by the Washington State Experiment Station at Pullman and by practical farmers will be begun this fall, to determine what solutions are most efficient and what conditions must be guarded against.

Complete eradication of smut by the united effort of every wheat grower is the surest protection against the pest.

Elko, Nevada, has ordered 145 cars to be used in shipping cattle from that point to San Francisco.

Arizona reports shortage of all range cattle.

True To Name TREES

CALIFORNIA ORCHARDISTS

Are reaping handsome fortunes from their investments

There is hardly a man in California today who is not looking eagerly forward to owning an orchard and fulfilling the part of "Living under his own vine and fig tree" and sharing the pleasures and profits which can be derived.

To the Prospective Planter this Year

We wish to call your attention to the great importance of securing

FIRST—Trees which are guaranteed "True to Name."

SECOND—Trees scientifically grown with perfect root systems and free from disease.

THIRD—Trees from a reliable concern, who employ only straightforward methods in their dealings with all patrons.

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It describes 2000 different varieties of trees and plans, is fully illustrated and contains much valuable information to planters. Mailed upon receipt of 25c in stamps.

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The Most Valuable Fruit Grown

New 20-page illustrated circular containing description, cultural directions and much other useful information, free.

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The new commercial tropical fruit. Will stand a temperature down to 10 or 12° above zero. Send for special circular.

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BURNS KEROSENE (Coal Oil)

Outshines city gas or electricity. Simple, noiseless, odorless, clean, safe, money-saving. Guaranteed. Write nearest office for catalogue M and learn how to get an Aladdin Mantle Lamp FREE.

AGENTS T. H. BALL SOLD 850 on money back guarantee, not one returned. Stacey sold 12 in one hour. Newsom sold 12 in 10 calls. Gibson sold 48 in 5 days. Sells itself. Needed in every home. Our Sunbeam Burner fits other lamps. Complete line for homes, stores, etc. Ask for our liberal agency proposition.

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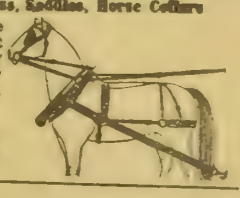

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J-M Asbestos Roofing is absolutely fire-proof because its base consists of several layers of pure Asbestos Felt. And Asbestos, you know, is the fire-proof, practically indestructible, mineral used in gas grates, stove mats, theatre curtains, etc.

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Because of this mineral or stone construction, J-M Asbestos Roofing is also rust-proof, rot-proof and acid-proof. And, like all stone, it never needs painting or coating.

No other ready roofing gives a building such absolute fire protection. None other lasts so long with so little attention. J-M Roofing is still in good condition on many buildings after nearly a quarter of a century of service.

Our nearest Branch will supply you with J-M Asbestos Roofing if not obtainable at your dealer's—also apply it, if desired.

SEND FOR THIS ODD STONE

We want to send you a free sample, just as it comes from our mines, of the curious Asbestos Rock of which this roofing is made. We want you to see for yourself that its long, silky, pliable fibres will not burn when held in fire.

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Merced Colony No. 2. Same soil, excellent location, abundant water, good drainage. Merced Colony No. 2 sold to California Farmers, men thoroughly acquainted with the soil and attendant conditions. Twenty sets of buildings already up. New settlers coming in daily. An ideal district for alfalfa, dairying and hog raising. Sweet potatoes, tomatoes, peaches and grapes thrive in the warm loam soil. Terms are easy. Write today for particulars concerning the new tract.

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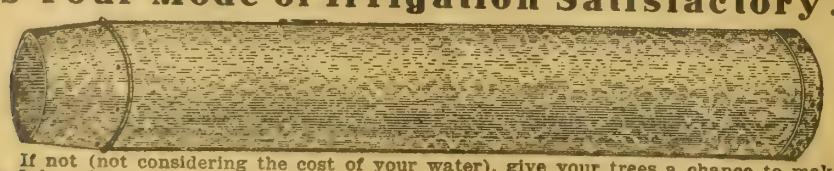


If not (not considering the cost of your water), give your trees a chance to make good by giving your orchard the proper amount of water all over same, and not three-quarters of your water supply within forty feet of your head flume.

The surface irrigating pipe we manufacture will remove this obstacle—will cut your water bill—is more convenient to use and will last a life time.

Write us, stating your requirements and we will cheerfully furnish you with prices and information desired.

We also manufacture Ells, Tees and Gates for this special pipe and are in a position to manufacture any special fittings you may require.

THE AMES IRVIN COMPANY Corner Eighth and Irwin Streets, San Francisco, California

When writing advertisers, mention Cultivator.

Cold or Roup of the Eyes.

Please advise me through the columns of your paper regarding a disease which has appeared among my chickens. The first symptoms, one eye appears weak, and in about a couple of days it inflames and swells and completely closes the eye. It never has affected both eyes. We have never found any mites or lice, and have examined them carefully. They do not lose their appetites.

Can you advise me as to the cause and remedy?—Subscriber, Orange.

Your chickens are taking cold, either from lice or from a small draught through a crack or knothole just on the level of their perch. Go down on your knees and put your head on a level with the perch, and you will be sure to find it. I know from personal experience. The boards on one house dried and cracks came after a hot summer, and a whole perchful of chickens got cold. As soon as I found it out a few laths nailed up stopped the trouble. Stop up cracks and knotholes, and wash the eyes and head with a solution of Germozone or with a weak solution of blue stone, and give bluestone or Germozone in the drinking water. A bit of bluestone the size of a navy bean in a quart of water for bathing the eye and for drinking.

There is a possibility that it may be roup of the eyes, in which case the above treatment is the best I know. Greasing the head and eyes with carbolated vaseline is also a good remedy.—Mrs. A. B.

Reproducing by Cuttings.

Will suckers from quince and fig trees prove desirable?—Subscriber, Nordhoff.

The fig is one of the easiest fruit trees to reproduce by cuttings, the quince less so, but with care good trees may be had. As to suckers there is a difference of opinion, but we believe that you can get first-class trees from sucker wood.

Gathering Peaches.

Referring to the remarks of Mr. Cox on Page 317 of the Cultivator, the thought occurs to me that you can aid us greatly by giving full directions as to best method of gathering peaches. They so easily bruise and decay when not most carefully handled.—Reader, Whittier.

The reader's suggestion is a most excellent one, but too late for this season. The gathering of peaches does not seem to have been made a feature of books on fruit culture and we suppose it is deemed merely a matter of best of care in handling fruit that has not yet reached the soft stage.

Dehorning Goats.

How close to the head should goats' horns be cut? I have goats one to five years old that I wish to dehorn. Is it necessary to give any treatment to the wound after the sawing? We consider the California Cultivator the best farm journal we have ever taken. Subscriber.

We have had no experience with dehorning goats. With cattle it is usually done by cutting slightly under the skin. This gives a chance to heal over and the cow takes on more of the perfect muley appearance. Where stubs are left the animal is still able to do some damage as they will grow longer. If dehorning is done in cool weather when flies are not a pest the wound is usually left without treatment; during fly season a coating of tar or other repellent may be used. We assume that two or three-day-old kids may be dehorned or have horn growth prevented the same as cattle by use of caustic stick.

Grinding Machine.

What are the mechanical reasons why low-priced machines can not be obtained for grinding alfalfa meal? Is there any loss of nutrient value when alfalfa is dried so that it readily powders in the hands? By nutrient value I mean power to produce tissue as distinguished from palatability. Is there sufficient nutrient in bean straw to justify grinding for hogs?—Subscriber, Jamacha.

We know of no reason why a low-priced machine may not be had for grinding alfalfa meal should the manufacturers see the demand for such a machine. Personally, we would not see the advantage of such grinding. The most desirable portion of alfalfa hay is the leaves. While grinding makes stems and all more readily available for digestion, once in the animal's stomach, we question whether there is sufficient gain to pay for the labor of grinding. For poultry, of course, it is most desirable. We believe there is no loss in the nutrient value of alfalfa by drying or grinding; neither is there any increase. Bean straw is a valuable food, but we have never heard of any advantage in grinding it. Ordinary field bean straw analyzes 3.6 per cent crude protein, while alfalfa hay should run over 11 per cent.

Wormy Fruit.

We take and carefully preserve every issue of the Cultivator, but would like to ask one question which we have not seen answered, and that is, how to prevent dried fruit from becoming wormy, especially for home use.—Subscriber, Chino.

If the fruit is taken from the trays in the middle of a hot day and kept in the dark or where the moths will not get to it, it is reasonably sure to be free of the insect pests. If, however, it is found that the eggs have been deposited and worms are showing up it would be well to dip in boiling water for several seconds or even a minute, then expose to the sun in the middle of the day to take off the surplus moisture. Be sure and take up while the sun is still hot, and pack away, covering with papers if necessary to prevent access of other insects. In small quantities for home use we have seen two-quart fruit jars used, but placing in paper sacks is usually sufficient. It is possible that where large quantities are lying fairly loose in a bin and the room can be tightly closed the use of bisulphide of carbon will destroy any animal life.

Breed of Stock.

Please tell me what is the best kind of cow for dairy use, also best work horse for farm.—Subscriber, Tulare.

The best dairy cow is the one in which you will take the greatest pleasure and will best fit your conditions. We have heard of enthusiasts testing different breeds of dairy cows or other animals side by side with excellent results for one breed, while a neighbor has directly opposite experience. Any of the greater dairy breeds like the Jersey, Guernsey, Holstein, Ayrshire, and possibly some others, will give excellent returns if handled with intelligence. It is a question of breeder as well as breed. The same applies to work horses. Will the farmer have his light driving horse or auto for road use and will the work horses have only the farm work to do? In such a case the heavy draft type is to be preferred. If a combination animal is wanted then a lighter breed should be selected. If the draft animal is chosen, it may be Percheron, Belgian, Clyde or Shire. The favorite in this state, if greater numbers indicate, is the Percheron.

General Agriculture

CO-OPERATION IN FRANCE.

In the departments of Provence and Languedoc where the cultivation is varied and there is a large quantity of early produce grown, a fruitful co-operative movement has been developing of late years. Under the authoritative guidance of the Union of Agricultural Syndicates of the Alps and of Provence, which comprises 250 syndicates and 250,000 members numerous societies have arisen side by side with the co-operative wine vaults, oil works and dairies, for the sale and carriage of fruit, vegetables, etc.

The Bulletin of Economic and Social Intelligence, published by the International Institute of Agriculture, gives an interesting account of these various forms of co-operative association in the June number. We may mention first of all the syndicates of Cuges, Lascours, Rocquevaire, which concern themselves with the sale of pickles, in the last mentioned place the society has also started the manufacture of apricot jam, and is doing business to the amount of 400,000 frs. a year.

The agricultural syndicate of Vallauris has organized the distillation and sale of orange flowers; it has 1700 members, and has an establishment at Golfe Juan which cost 200,000 frs. to set up. Thanks to its exertions, producers have seen the price of orange flowers rise from 0.30 frs. to 1.10 and 2 frs. the kilogram.

For some time past the co-operative exportation of table grapes has been attempted with equal success. At Cabrieres-d'Aigues (Vaucluse) the growers of these grapes have joined together in a society with a capital of 2000 frs. and have obtained a loan from the state fund for agricultural co-operative credit of 400 frs. The grapes are packed in baskets holding 10 kg., and are sent for the most part to the markets of Cologne and Geneva. In 1909 there were 350 quintals of grapes exported at the net price of 18 frs., and in 1910 the quantity was 250 quintals, the price being 45 frs. per quintal.

Another interesting form of association has been started with success in this region; that for the carriage in common of fruit and vegetables, which is likely to put the growers in a position to take advantage of the reduced tariffs granted for the expedition of complete wagon loads. There are already five societies of this kind in the Gard and Vaucluse.

We may mention, for example, the Syndicate of Rochefort-du-Gard, which confines itself to collecting together, at the station near the hills, the tomatoes already packed by the members, and sending them to the Paris markets. The consignment is made to a transport agency of the Capital which delivers the goods at their destination, collecting the sums indicated in the various invoices for the account of the syndicate.

This system has reduced the carriage expenses to the half, and has been the means of lengthening the season for the expedition of tomatoes by three months. In 1910 the syndicate sent off more than 1000 tons of produce, the railway expenses for which were 60,000 frs. and those for the camionnage in Paris about 8700 frs.

The neighboring syndicates adopted the same measures for the consignment of cauliflowers, potatoes, etc., which are sent to England and Switzerland.

A new association which has arisen at Carpentras for the sale of grafted vines which have been grown by the members, is worthy of mention. The Nurserymen's Co-operative Society of Vaucluse has a capital of 7500 frs. at the present day and 2000 members who have 60 hectares of land out in nurseries. In 1910 about 18,000,000 wild vines were planted, the total expenditure being 300,000 frs. and 5,500,000 plants of first quality were sold for 550,000 frs. The society supplies its members with manure and vine slips and pays each member 60 frs. on account for every thousand vines delivered. Within a very short time it has succeeded in regulating and improving the trade in these products, which is daily acquiring greater importance in connection with the reconstruction of vineyards in France and Algiers.

BUYING THE AUTO.

Picking out the right car is not the task it was once, there are many good cars now and there is less possibility of going wrong. Styles of body and design of motor and the mechanical features have become standard.

So the four-cylinder, shaft-driven car is today by far the most popular and I believe it is justly so. I have owned many different types of cars and have driven many more, all the way up and down the line from the one to the six cylinder, and the four seems to be the happy medium.

Of course, in the lighter cars and runabouts one has the satisfaction of simplicity in the one and two cylinder cars and I would much rather have a good single-cylinder than a cheaply constructed four.

Choosing the best car for one's needs, however, is not so easy.

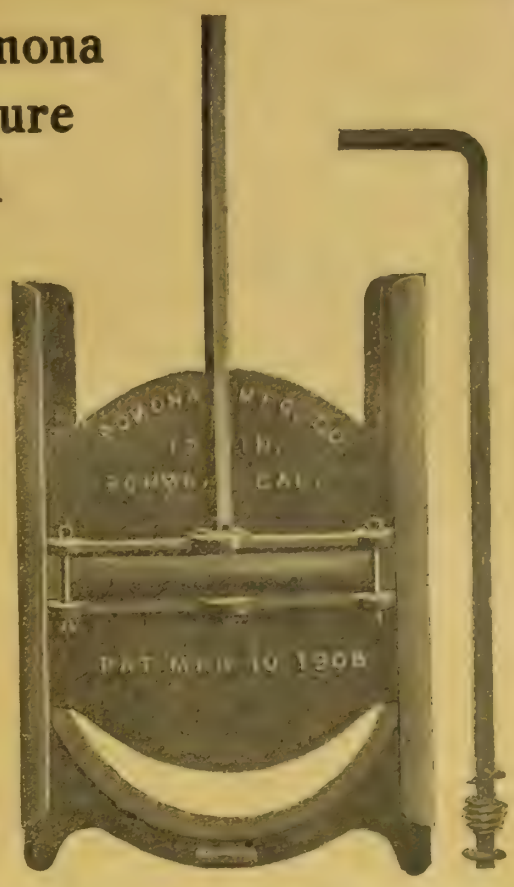
If I were buying a new car I would go about it in this way. First, I would write and get the catalogues and printed matter of every automobile maker who advertised extensively—I put in this last clause because it is a fact that there is not a good car of careful manufacture on the American market which is not thoroughly advertised—when I had received the catalogues I would spend many a pleasant evening going over the details and learning the details which go to make one car superior over the other.

I would look carefully to a few things, for instance, the steering gear and spindles, the width of brakes and strength, the number of bearings in the motor, the transmission, etc., then I would compare the factories and find out if the car of my choice had had the "right bringing up."

Of course, you know what style of car is best suited to your needs, and whether you would prefer the five or four passenger body or the light runabout style for two. You can afford to give this matter some serious consideration, as I have had several friends who bought runabouts when they should have had a touring car and four passenger cars when they carried two all of the time.

There is no need of arguing as to the practicability of the automobile on the farm any more; we have proven that

Give the Pomona Patent Pressure Gate a Trial



No rubber or wooden facing to rot or wear out. Absolutely water tight when closed. Locking mechanism is protected against rust or clogging with sand or dirt. Simple in construction. Cheap in price and as durable as solid iron.

THE LOCKING DEVICE is the simplest made, merely a tapering screw with split tapering nut socket. It locks the cover in any desired position or locks the faces, making an ABSOLUTELY WATER TIGHT JOINT.

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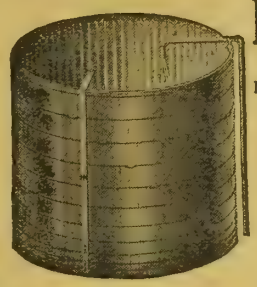

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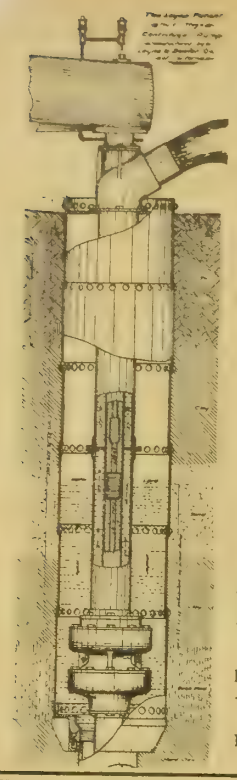

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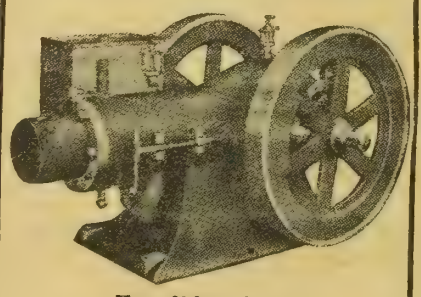

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27 N. Stoneman Ave. ALHAMBRA, CAL

The fall rodeo is on all over stock ranges of Arizona.

the motor car is quite as much in place on the country road as the city pavement and really more of a necessity to the farmer than to his city cousin.—Ex.

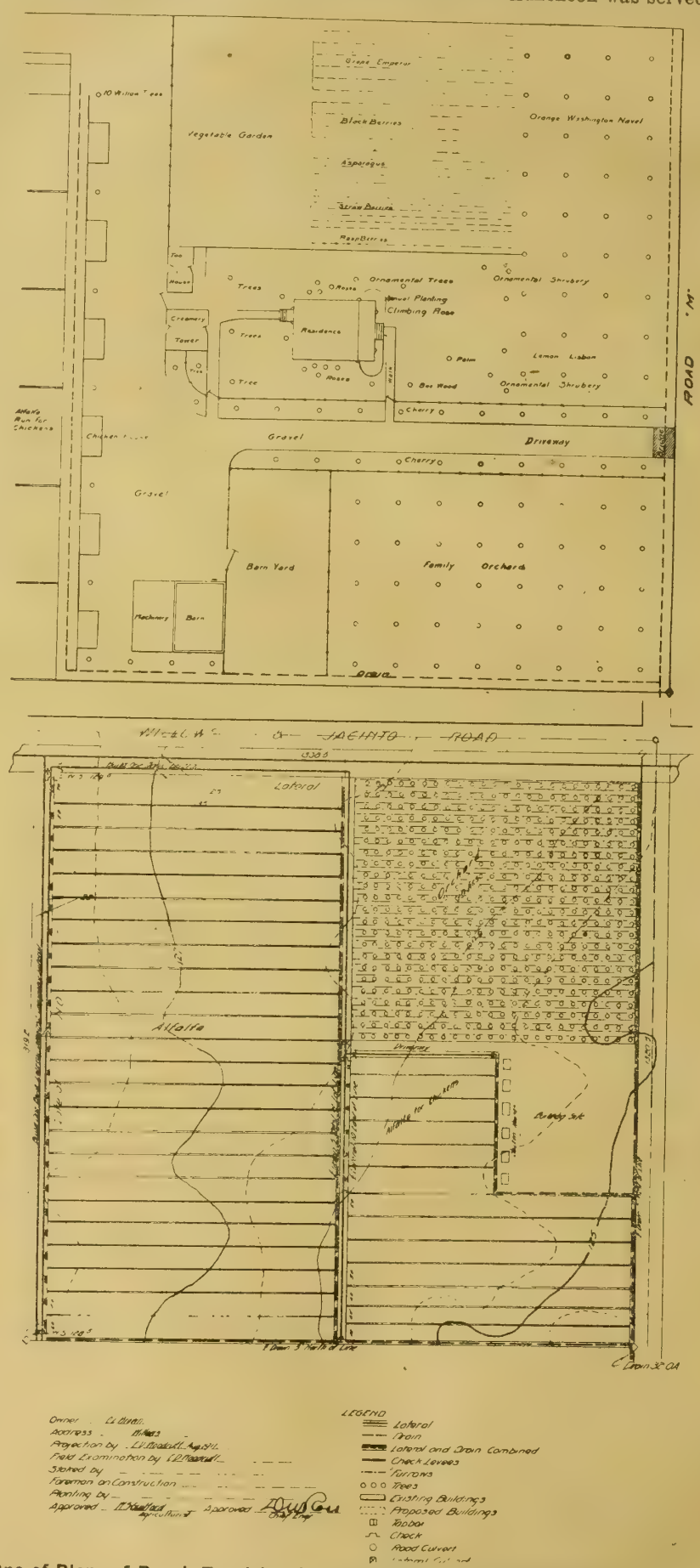
CONSERVING ENTHUSIASM.

(Continued from Page 385.)

tendent of the Arlington Heights Fruit Company of Riverside, and of course two of the best drivers at the wheel.

Seeing the Farms.

The day was typical of California and an early start was made. The first bunch of ranches judged was made up of new places started within the last year in a section southeast of Willows in Glenn County, some five or six miles. The principal crop grown on these places is Egyptian corn, which answers for poultry, hogs and cows and makes a good start in getting the land in better condition for alfalfa. Each of the places showed some preparation for alfalfa and the prize winning first year orchard work was in this section. From here the machines took us ten miles to the north, judging nearly a dozen ranches on the way. This was north of the town of Jacinto on the banks of the Sacramento river in Glenn County. The most interesting feature of this ride was the experience in driving along the levees of the "river of romance." Luncheon was served at one of the ranch houses of the company known as the Schadd ranch. After luncheon the remainder of the places were visited and the scores counted up, showing the following winners:



One of Plans of Ranch Furnished by Agricultural Department of Sacramento Valley Irrigation Company. The Lower Plan Shows General Plan of Ranch With Engineer's Contours. The Upper Shows Detail of Building Site, Marking Location for Ornamentals, Small Fruits, Etc.

Prize Winners.

Best general farm, G. N. Davis of Princeton, Colusa county; second, L. L. Grieve, Princeton; third, E. E. Wood, Princeton.

In the first year development of farm Mr. S. C. Davis of Glenn was given first place and Mr. R. H. Russell of Willows, second. First year orchard, John Suchy of Willows won first, and C. Schuler of Willows, second. For the first stand of alfalfa Wm. Hubbard of Princeton was given first prize, and J. F. Windell of Glenn, second. For best preparation for alfalfa, L. J. Lowery of Willows took first and R. G. Jesse of Glenn, second. Mr. G. N. Davis of Princeton, winner of the first general farm prize, was in last year's contest and his farm was then fully considered by the judges, but through not being so productive as others was not granted a prize.

The best first year of development by Mr. S. C. Davis was a proof that the back to the farm movement is accomplishing some good. Mr. Davis was formerly a minister and entered upon his ranch experience with most limited knowledge of farm life. He was just beginning his work when the judging of last year's contest was taken up and afforded an excellent opportunity to the judges to see one year's work as done by a man not especially strong of muscle, but with a will to do things. Mr. Davis has done his year's work with but little money outside of the production of his own place. He has grown Egyptian corn, melons and garden truck of practically all kinds and has started a number of fruit trees. Cows, pigs and poultry enter into the ranch scheme and all have aided in supplying the house with necessities and even some luxuries during this first year. The Jersey heifer which Mr. Davis won will add to the worth of the bunch of cows he now has.

The prize for first year orchard trees, which went to Mr. Suchy, was well deserved. These trees showed a wonderful growth. Only one or two vacant spaces in the orchard showed the percentage of stand to be excellent.

Mr. Hubbard, winner of first prize for best stand of alfalfa, was entered in no other class, but he certainly understands growing of alfalfa and has a most excellent showing.

Mr. Lowery, winner of first prize for first year preparation for alfalfa, had his ditches provided with gates, dikes, well constructed and compact, and his ground in generally the best condition of any of the contestants. He is one of the newer comers to the valley and his place bears the marks of being handled by one thoroughly competent to make the winning of more prizes than his 100 pounds of alfalfa seed.

The plan of judging was for the best general farm, and best first year development to give to improvements 25 points; irrigation system, that is, arrangement of head ditches and flumes, 25 points; production and crop yield, 25 points; neatness and arrangement of place, 15 points; and productions or diversity of general farm crops, 10 points. If improvements were perfect it was granted the full 25 points; if not, from that number was taken enough points to meet the conditions which the ranch showed.

The other contestants were: Frank Lawrence, C. F. Warriner, C. B. Henry, T. S. Henry, B. Maitner, F. E. Tyson, R. W. Smith, P. J. Cook, V. E. Breese, M. D. Adams, T. T. Smith, R. C. Jesse, J. W. Jesse, J. C. Grussener, C. Parella, J. E. Combs, Wm. Rosebrock, J. R. Adams, W. P. Watkins and W. H. McCauslan.

Household Department

HALLOWE'EN.

Bring forth the raisins and the nuts—
Tonight All-Hallowe'en Spectre struts
  Along the moonlit way.
No time is this for tear or sob,
Or other woes our joys to rob,
But time for Pippin and for Bob,
  And Jack-o'-Lantern gay.

Come forth, ye lass and trousered kid,
From prisoned Mischief raise the lid,
  And lift it good and high.
Leave grave old Wisdom in the lurch,
Set Folly on a lofty perch,
Nor fear the awesome rod of birch
  When dawn illumes the sky.

The air resounds with tuneful notes
From myriads of straining throats,
  All hailing Folly Queen;
So join the swelling choral throng,
Forget your sorrow and your wrong,
In one glad hour of joyous song
  To honor Hallowe'en!
—John Kendrick Bangs, in Harper's Weekly.

ON THE WEDDING MORN.

Scene—A high noon wedding at home.

Characters—Mr. and Mrs. Also Present.

He—"Awful bore, this wedding business, isn't it?"

She—"Quite the contrary. I think it delightful."

He—"H'm—Do you think the decorations are pretty?"

She—"Not at all. They are evidently of home manufacture."

He—"Oh, there's Rose Passee and Algy Mainspring. He looks as bored as I feel."

She—"Yes, men are so coarse. It always takes something gross to interest them. Rose is flirting desperately, as usual. Beginning to show her age, too, isn't she?"

He—"Oh, I don't knod. I think her a stunner."

Seh—"That's the way with you men. You never see below the powder."

He—"Sometimes it covers a multitude of sins. Now, in your own case——"

She—"Brute! Sh-sh—Here they come. I can't see anything but the wretched fit of her gown and the tip end of the groom's nose."

He—"I can't see anything but ten waving, wabbling, willow plumes on ten skyscraper hats. If you women ——"

She—"Sh! They're beginning——"

He—"More's the pity. Some day he'll wish they had never begun. What's the good of coming? A man's a fool to let his wife——"

She—"Sh—sh!"

He—"What does the groom look like, anyhow?"

She—"The tip end of his nose is lovely."

He—"That's like you women. Never see further than the end of a man's nose."

She—"I've seen beyond that in your case, and found nothing to pay for the investigation, merely an empty vacuum. How silly it is to sing 'For All Eternity' at weddings in this trial marriage age."

He—"Is it over? I'm deuced glad of it. Now let's go home."

She—"By no means. We must congratulate them."

He—"On what? Oh, piffle——"

She (to Bride)—"Dear Alice, a thousand good wishes, I'm sure. A lovely wedding, and such a perfect gown, and as for the decorations, they're simply perfect!"

He (to Bride)—"Congratulations! Best wishes! Everything ripping!—oh, no, not that—merely slang for lovely, great and other adjectives, you know!"

She (to Groom)—You're the envy of all the men. Alice is such a nice girl, even if she isn't pretty. But then——"

He (to Groom)—"Congratulations, old top. Hope you won't regret it, don't you know. Know you'll be glad when it's all over, won't you?"

She (in the library, where the gifts are displayed)—"Same old things. Well, I declare! If there isn't that ice bowl I gave Blanche Sterling at Christmas! How she does pass things along!"

He—"Where's ours?"

She—"'Way over in the corner by the door, where nobody will see it. I'm glad I forgot to take off the price tag after I marked it up. I hope she won't try to exchange it for something of the value I've put on it. That would be just like her, however."

He—"They're serving champagne punch. Do let's get into the crowd."

She—"Of course. But don't look so eager. People will think we never have champagne."

He—"Well, do we? Hurry up, can't you?"

She—"Sh! Do act as if it didn't matter. (To waiter) Yes, just a sip. Only a small piece of cake. Thanks."

He—"Great, isn't it? Another? Yes, I don't care if I do."

She (aside)—"You're behaving disgracefully."

He—"I don't care. A fellow must have some reward for sissying around these places. Yes, you may fill it up again. No cake, thanks."

She—"We must go at once. I'm mortified to death. What will people think? And just as we are getting a social foothold, too. (To hostess) Oh, good-bye, Mrs. Matchmayker; everything was charming. We've enjoyed it so much. I hope Alice's marriage will be as happy as ours. Mr. Present and I never disagree in the slightest particular."

He—"Good-bye, er—Oh, I've left my cane—just wait a moment."

She (after a five-minute interval of waiting)—"I knew I would find you at the punch bowl again! You wretch! I remembered after you had gone that you hadn't brought a cane. Now come at once!"

He—"Hooray! Weddings are great things, my dear. I'm drinking toasts, and I'm just getting warmed up——"

She—"Well, if warming up is what you want, just come along——."—Sunday Magazine.

One ship drives east, and another west,
With the self-same winds that blow;
'Tis the set of the sails,
And not the gales,
Which decides the way to go.
Like the winds of the sea are the ways of fate,
As we voyage along through life;
'Tis the will of the soul
That decides its goal,
And not the calm or the strife.

It is not what stays in our memories, but what has passed into our characters, that is the possession of our lives.

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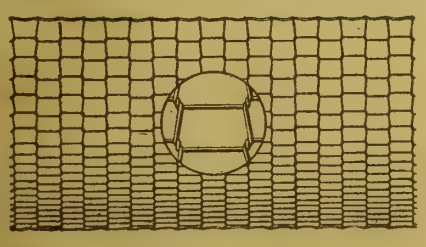

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This Washer Must Pay for Itself.

A MAN tried to sell me a horse once. He said it was a fine horse and had nothing the matter with it. I wanted a fine horse. But, I didn't know anything about horses much. And I didn't know the man very well either.

So I told him I wanted to try the horse for a month. He said: "All right, but pay me first, and I'll give you back your money if the horse isn't all right."

Well, I didn't like that. I was afraid the horse wasn't "all right" and that I might have to whistle for my money if I once parted with it. So I didn't buy the horse, although I wanted it badly. Now this set me thinking.

You see, I make Washing Machines—the "1900 Gravity" Washer.

And I said to myself, lots of people may think about my Washing Machine as I thought about the horse, and about the man who owned it.

But I'd never know, because they wouldn't write and tell me. You see, I sell my Washing Machines by mail. I have sold over half a million that way.

So, thought I, it is only fair enough to let people try my Washing Machines for a month, before they pay for them, just as I wanted to try the horse.

Now, I know what our "1900 Gravity" Washer will do. I know it will wash the clothes, without wearing or tearing them, in less than half the time they can be washed by hand or by any other machine. I know it will wash a tub full of very dirty clothes in Six minutes. I know no other machine ever invented can do that, without wearing out the clothes.

Our "1900 Gravity" Washer does the work so easy that a child can run it almost as well as a strong woman, and it don't wear the clothes, fray the edges nor break buttons the way all other machines do.

It just drives the soapy water clear through the fibres of the clothes like a force pump might.

So, said I to myself, I will do with my "1900 Gravity" Washer what I wanted the man to do with the horse. Only I won't wait for people to ask me. I'll offer first, and I'll make good the offer every time.

Let me send you a "1900 Gravity" Washer on a month's free trial. I'll pay the freight out of my own pocket, and if you don't want the machine after you've used it a month, I'll take it back and pay the freight too. Surely that is fair enough, isn't it?

Doesn't it prove that the "1900 Gravity" Washer must be all that I say it is?

And you can pay me out of what it saves for you. It will save its whole cost in a few months, in wear and tear on the clothes alone. And then it will save 50 cents to 75 cents a week over that in washwoman's wages. If you keep the machine after the month's trial, I'll let you pay for it out of what it saves you. If it saves you 60 cents a week, send me 50 cents a week till paid for. I'll take that cheerfully, and I'll wait for my money until the machine itself earns the balance.

Drop me a line today, and let me send you a book about the "1900 Gravity" Washer that washes clothes in 6 minutes.

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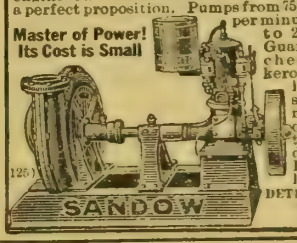

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And give to your friend the very same day,
Than a bushel of roses, white and red,
To lay on his casket when he is dead.

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Save Money By Buying This Good Second-Hand Pipe

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If thinking of buying any kind of pipe, your best interests will be served by writing us for prices and particulars.

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When writing advertisers, mention Cultivator.

REAL FUN FOR HALLOWE'EN.

Every boy feels that he has a special right on Hallowe'en night to go out and have some fun. Somehow or other the fun is very apt to be at the expense of other people. It may seem very amusing to take gates off their hinges and hide them; but this is cruel fun, for it makes work for the older people who have to put them back again.

Ringing doorbells is another standing joke that may turn out badly. Some boys once stood a board up against a front door, rang the bell and ran across the street to see what would happen. A woman came to that door with a lighted lamp in her hand, and the board fell against her, smashing the lamp, and setting her on fire, so that she was terribly burned.

There are plenty of ways of having fun without injuring anybody, and a good plan is to get up a hallowe'en masquerade party. Let every boy hunt up the queerest old clothes he can find and dress in them, so that the others will not know him. If he has not a mask he can rub his face with burnt cork, or paint himself to look like an Indian, doing anything that will make it hard for the other boys to recognize him.—The Delineator for October.

PRETTY HALLOWE'EN TABLE FANCIES.

A particularly pretty table fancy was shown at an informal evening party where the supper was "en buffet." Lighted jack-o'-lanterns were placed on the sideboard and a large weirdly-shaped Japanese lantern hung directly over the dining room table. The table was round and was covered with a bright yellow cloth. Two large brass platters were placed at one end of the table with a proper distance between them to give them the effect of being big round eyes. A large round cake iced with pistachio frosting filled the center of each platter while a rim of small white cakes outlined them prettily. The "nose" was another round dish filled with little round nut sandwiches and the "mouth" was a half moon of small round brass dishes filled with fruits, bonbons, nuts and so forth.

Each feature was outlined by bitter-sweet vine and the effect was as novel as it was charming. Having the features not too close looked best. A pretty table for Hallowe'en or for any autumnal party can be planned by having the tabel bare with big doilies cut from scarlet material in the shape of maple leaves. For a centerpiece a dish or bowl of highly polished fruits looked most dainty, draped with the airy clematis. If for Hallowe'en a bare branch can rise from the center of the fruits on which can be perched two or three saucy looking paper owls.

Strings of small red apples and gilded nuts can depend from the chandelier, while loops of popcorn rubbed with phosphorus are effective when the only light is shed from jack-o'-lanterns.

Little crook-neck squashes, hollowed out, make delightful little horns of plenty to fill with bonbons or candied fruits, while apples and oddly-shaped potatoes will serve nicely for candlesticks, having the candles colored red, green or yellow.

TO RENOVATE BRONZE-WORK.

Mix 1 part muriatic acid and 2 parts water. Remove all grease and dust, and apply with a cloth. When dry polish with sweet oil.

THE HALLOWE'EN FEAST.

Wisdom Cakes.

Select good-sized dates and with icing mark the features of the owl on each, cutting the ears into the dates. Press these into fresh icing placed on oblong molasses cakes and put citron on to represent branches; then form feet with chocolate icing.

Hobgoblin Cups.

Serve frozen cider sherbet in the hobgoblin cups which are made of papier mache and come expressly for this purpose. Each cup bears a different expression, and green paper pumpkin leaves also can be purchased on which to serve them. If the cider is sweet then enough lemon juice should be added to give zest to the ice. When the ice is frozen to a mush add one cupful of sweet cream to each quart of cider and finish freezing.

Ghost Apples.

Large, perfect apples are cored and baked until soft, but not long enough to burst the skins. These are cooled and served singly to each person, together with a marshmallow, three cubes of sugar and a liquor glass of brandy. The marshmalowls are pushed down into the bottom of the cavities left by the removal of the cores and the remaining space filled with the cubes of sugar. Upon these the brandy is poured and then lighted. It burns with a ghostly blue flame until the alcohol is consumed and the sugar melted. The apples are then eaten with cream.

BY REQUEST.

The state library has recently had the privilege of checking the census list of the blind in California. It was found that, although over four hundred blind people were enrolled as borrowers from the state library for the blind—and this is the greatest number of borrowers in any state in the Union—there are still between eight and nine hundred blind not borrowing. It is the desire and aim of the state library to reach these hundreds of people, and anyone who knows a blind person is asked to tell him or her that embossed books in five different types are loaned free of all cost to any blind in the state, simply on application. It has been found that almost any one who does not already know how to read raised types can learn with an alphabet and primer borrowed from the library. A letter of request for information or books will receive an immediate response. Address the State Library, Sacramento.

HOW TO FIGHT ANTS.

Of all the insect pests which trouble the housekeeper there are none that are so difficult to deal with as ants. To understand the difficulty of exterminating either the black or red ant, one must know something of their habits. Here is a brief outline which will aid the housekeeper in carrying out a successful plan for the extermination of these pests: Ants live in colonies, and are divided into males, females and neuters. The neuters do the work. The males and females rarely leave the colony. The swarms of ants that appear in the house are composed of neuters. The destruction of these ants will lessen the nuisance, but the insects cannot be exterminated in this manner, for others to replace them will be produced in the colony. The colony or nest must be found, and the males and females destroyed. This is a difficult matter,

and it is only by patient watching that one is able to follow the ants to their home. The colony may be in the soil outside the house, in which case it is easily found; or it may be in the walls or under the floors of the house, where it is more difficult to reach them.

To exterminate ants, trace them to their home. To do this, it may be necessary to remove part of a floor or the baseboard of a room. Wherever the nest is found, such measures must be taken as shall kill all life in it. If the nest is in the house, saturate it with keresene oil or with boiling water. If the nest is in the ground, have a long, sharp pointed stick, which press into the nest, remove quickly, and pour about two ounces of bisulphide of carbon into the hole; close at once by pressing the foot on the hole. Proceed in this manner until six holes are made, filled and closed. The fumes of the bisulphide of carbon will penetrate to every part of the nest, destroying all life. Be careful not to breathe the fumes of the chemical, and be very careful not to have light or fire near when using it. A lighted candle, cigar or pipe might cause an explosion.

Ants may be trapped in either of the following two ways: Cover plates with a thin coat of lard, and set them in the places infested by the insects. Place little sticks at the side on which they can mount to the plates. When the plates are full, drop them into a pan of hot water. Or wet sponges with sweetened water and place them about. When full of the insects, drop into hot water. A poison called ant sugar, which may be obtained from any drug store, will also be found effective.

Strong odors will sometimes drive away these pests, but as a rule one does not want to use such odors where there is food. Among the odors that may be used are oil of pennyroyal, oil of cedar (a few drops put on bits of cotton, which are then placed in the infested places), or gum camphor.

To protect food, keep it as much as possible in closely covered tin boxes, or in the refrigerator, or on tables which are protected by having the legs placed in four dishes, in each of which there has been poured some tar water, to the depth of about four inches.—Country Gentleman.

First Year Work of Girls at San Luis Obispo State Polytechnic School.

HOMELY HINTS.

To scald tomatoes easily, place them in a thin bag and dip in boiling water.

Chopped preserved ginger added to the sauce served with cottage pudding is a delicious accompaniment.

To give a very delicate scent, place a large piece of orris root in the water in which lingerie is washed.

To keep salt meat from molding, rub every fortnight with white of egg in which has been mixed a little salt.

A pallette knife is a great help in the kitchen for cleaning cake dough from the mixing bowl and for many other uses.

To get the best results from dried fruits, put to soak in warm water to which a generous pinch of salt has been added.

To clean and tighten cane seats, soak them well in hot water and use soap if it is needed. Then dry in the open air.

A tasty desert is made of squash or pumpkin prepared as for a pie. It is baked in a pudding dish like a baked custard.

If the cellar is dark, it is a good plan to have the bottom step painted white, so that it can be seen in the dim light.

A little molasses put on the roosting place of the sparrows when they become a nuisance over the windows will drive them to other quarters.

THREE EGGLESS RECIPES.

Pumpkin Pie.

Allow one cup of cooked pumpkin for each pie, half cup of brown sugar, one tablespoon of flour or teaspoon of cornstarch, one scant cup of sweet cream, one-fourth teaspoon of baking powder, and the same amount of spice or cinnamon. Beat well, bake with one crust.

Corn Bread.

Mix one scant teaspoon of soda and one of salt and just a pinch of sugar with three pints of sifted meal. Stir in milk until a rather soft batter is formed; beat until light, pour in a shallow pan, hot and well greased. Bake in a quick oven.

A Good Fruit Cake.

Cream together one cup of sugar and half cup of butter. Add one cup of sour milk, one teaspoon of mixed spices, one level teaspoon of soda and two cups of flour, and one cup of chopped raisins rolled in flour. Bake in a loaf.

"We are always in these days endeavoring to separate intellect and manual labor; we want one man to be always thinking and another to be always working, and we call one a gentleman and the other an operative; whereas, the workman ought often to be thinking, and the thinker often to be working, and both should be gentlemen in the best sense. As it is, we make both ungentle, the one envying, the other despising his brother, and the mass of society is made up of morbid thinkers and miserable workers!"—John Ruskin.

"A good action does not make a sinner into a saint any more than a leap into the air makes a fish into a bird."

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Cultivator Order Blank

_____ 1911

CULTIVATOR PUBLISHING CO.,

115 No. Broadway, Los Angeles, Cal.

Gentlemen—Enclosed find _____ for which please send the **Cultivator** to the following until January 1, 1912, stopping same at expiration.

NAME	P. O. ADDRESS	STATE

SIGNED _____

ADDRESS _____

San Francisco-Los Angeles Produce Markets

Los Angeles Market

LOS ANGELES, Oct. 25, 1911.

Butter.

Butter has advanced three points and now stands at 33c for extras. Very firm condition on all better grades.

Prices to trade 2½c in advance of the following Produce Exchange quotations:

Extras	33
Firsts	29
Ladles	23
Country	20

Cheese.

Local Anchor	16
Oregon Daisy	16½
Northern Fresh	16@17
Domestic Swiss	18
Imported Swiss	32

Eggs and Poultry.

Strictly fresh are out of sight now, going at 49c for candled and with some sales at 50c. Case counts are readily selling at 45c. Every offering is quickly picked up.

Buying prices f. o. b. Los Angeles are:

Local Ranch Candled	49
Case Count	45
Eastern	32@34
Eastern storage	25@26
Pullets	26

Dealers pay for live poultry f. o. b.:

Hens, lb	13@17
Roosters	8
Broilers	19
Fryers	12
Roasters	12
Turkeys	21@24
Ducks	13
Geese	12
Guinea hens, doz	4.00
Squabs, doz	1.75

Live Stock.

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs	7¼
Prime steers	6
Heifers	6
Calves, lb	6½
Sheep, ewes, head	4.75
Lambs, head	3.75@4.25
Wethers	5.00@5.60

Potatoes.

Wholesale prices are:

Sweets, yellow, cental	1.50@1.75
Highlands, cental	1.60@1.85
Salinas	1.85@2.10

Onions.

Wholesale quotations:

Australian Brown, cental	1.40@1.50
Silverskins, sack	1.75@1.85
Yellow Danvers, cental	1.40@1.50
White Wax	1.50@1.65
Garlic	5@6

Vegetables.

Wholesale quotations:

Artichokes, Northern, doz	90@1.10
Beets, doz bunches	35
Bell Peppers, lb	4@5
Brussels Sprouts, lb	8
Beans, Limas	4@5
Beans, Green and Wax	5@6
Green Chilis	3@5
Chilis, Red	15@16
Cucumbers, lugs	50@60
Cabbage, sack	75@85
Cabbage, Red, lb	3@3½
Cauliflower, doz	90@1.00
Celery, new, crate	1.50@1.75
Carrots, sack	90@1.00
Corn, lug	50@60
Egg Plant	3@5
Horseradish, lb	13½
Onions, Green, doz bunches	15@20
Kohl-rabi, doz bunches	40
Leeks, doz	35@40
Lettuce, crate	90@1.10
Mushrooms, lb	50@1.00
Oyster Plant, lb	15@20
Okra	6@8
Peas, lb	5@7
Parsnips, doz bunches	45
Parsley, doz bunches	25@30
Turnips, sack	90@1.00
Radishes, doz bunches	15@20
Rhubarb, Crimson Winter	90@1.00
Spinach, doz	15@20
Squash, Summer	30@40
Spearmint, doz	25@30
Tomatoes, lug	50@60
Turnips, sack	1.00@1.25
Watercress, doz	35@40

Citrus Fruits.

Valencias	3.75@4.25
Grapefruit	2.75@4.50
Lemons	3.50@4.00
Limes, hundred	1.25

Fresh Fruits.

Wholesale prices on the market are:

Alligator Pears	1.25@1.50
Apples, Bellefleurs	90@1.15
Apples, Spitzenbergs	1.35@1.65
Apples, Pearmains	1.25
Apples, Jonathans	1.90@2.35
Apples, Crab, lug	1.25
Bananas	4@4½
Casabas, crate	1.40@1.50
Cantaloupes, small	75@1.00
Cantaloupes, large	2.00@2.50
Figs, box	75@1.25
Grapes, Thompson Seedless, lb	3
Grapes, Black Hamburg, lug	65
Grapes, Muscats	75@90
Grapes, Tokays	85@1.00
Grapes, Cornichon	1.10
Loganberries	6@8
Peaches, lug	65@1.00
Pineapples	8@10
Quinces, lug	80@1.00
Persimmons	1.00@1.25
Pomegranates, lug	1.25
Plums, Clymans, lug	1.50
Plums, Tragedy	1.50
Pears, Bartlett, box	2.50
Blackberries	8@9
Raspberries	10@12
Strawberries	5@10
Watermelons, lb	¾@1

Dried Fruits.

Wholesale prices to retailers are:

Evaporated Apples, fancy, lb	12@12½
Apricots	16@17
Figs, box	80@1.75
Peaches	11@12½
Nectarines	12
Pears	12@13
Prunes	8½@14
Plums	10

Beans, Dried.

Wholesale quotations:

Limas	5.50
Black Eyes	4.50@5.00
Pinks	4.25@4.50
Lady Washington	4.25@4.40
Small White	4.25@4.50
Garvanzas	4.50
Bayous	4.50@5.00
Lentils	6.00@7.00
Mexican Reds	4.75@5.00

Nuts.

Wholesale quotations:

No. 1 Soft Shell Walnuts	14
No. 1 Hard Shell Walnuts	13½
No. 2 Walnuts	11
Almonds, IXL, lb	19@20
Pecans, polished	15@17
Pecans, Eastern	8
Peanuts, California	6
Pine Nuts	18

Honey.

Wholesale quotations:

Extracted Water White	8½
Extracted Light Amber	7½
Comb Water White	16@17
Light Amber	13@14
Beeswax	30

Hay.

Buying prices f. o. b. cars Los Angeles:

Barley Hay	13.00@14.00
Wheat Hay	13.00@14.00
Tame Oats	15.00@17.00
Alfalfa	13.50@14.50

Grain.

Wholesale selling price f. o. b. Los Angeles:

Wheat, new, cental	1.75@1.80
Corn	1.70@1.95
Kaffir Corn	1.80
Millet	3.75
Popcorn	4.75@5.00
Egyptian Corn	1.75
Red Oats	1.90
Seed Barley	1.50
Milo	1.95

Feed Stuff.

Wholesale selling price f. o. b. Los Angeles:

Alfalfa Meal	1.15
Beef Scrap	3.00
Bone Meal	2.05
Charcoal	2.00
Cracked Corn	2.00
Cracked Wheat	1.90
Shorts	1.95
Bran	1.70
Oil Cake Meal	2.60
Feed Meal	2.05
Rolled Barley	1.90
Middlings	1.85

Do your cows milk hard? Send 50 cents for teat expander. O. J. Weber Co., 225-227-229-231 East Sixth St., Los Angeles, Cal.

Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 225-227-229-231 East Sixth Street, Los Angeles.

San Francisco Market

SAN FRANCISCO, Oct. 24, 1911.

Butter.

Butter advanced heavily during the last of the week, and dropped again on Monday, but still is 4c above last week's quotations. Market very firm.

Prices to trade 2½c in advance of the following Produce Exchange quotations:

California Extras, lb	32½
Prime Firsts	31
Firsts	30
Seconds	24

Cheese.

California Flats	12@15
Cal. Young America, fy, new	15@15½
Oregon, fancy	13½

Eggs and Poultry.

A strong advance is noted in eggs with a very firm market.

Official quotations of the San Francisco Wholesale Dairy and Produce Exchange are:

Fresh Ranch Extras	50
Firsts	44
Seconds	25
Eastern Seconds	17
Select Pullets	38
Hens	3.50@9.00
Fryers, doz	5.00@6.00
Ducks	4.00@7.00
Broilers	3.00@4.00
Roosters, doz	4.00@9.00
Geese	2.00@2.50
Goslings, pair	2.00@2.25
Pigeons	1.50@2.00
Turkeys	24@27
Squabs	2.00@3.00

Live Stock.

San Francisco prices, gross weight:

Steers	4@6
Cows and Heifers	3@4¾
Calves, lb	5@6¾
Hogs	6½@7
Wethers, No. 1	3¾@4
Lambs	4½@5
Ewes, No. 1	3¼@3½

Potatoes.

Wholesale market quotations:

River Whites, cental	90@1.10
Alamedas	1.00@1.50
Sweets, cental	1.60@1.75

Onions.

Yellow, new	75@1.00
Garlic, new, lb	3@4

Vegetables.

Wholesale quotations:

Asparagus, box	1.00@1.75
Beans, String	3@5
Beans, Wax	1½@2½
Limas	4@6
Bell Peppers, box	75@1.00
Cabbage, cental	75@85
Cauliflower, doz	50@60
Carrots	50@80
Cucumbers, box	75@1.00
Corn, sack	50@1.25
Chili Peppers, box	40@1.00
Celery, crate	1.50@2.50
Egg Plant, box	35@60
Lettuce, crate	75@2.00
Okra, box	50@85
Peas, sack	1.75@2.00
Hubbard Squash, sack	50@75
Summer Squash, lug	75@1.15
Squash, Marrowfat	50@85
Tomatoes, box	15@40
Turnips	60@75

Citrus Fruits.

Valencias	3.25@4.50
Grapefruit	3.00@4.50
Lemons	2.00@5.50
Limes, Mexican	4.50@5.00

Fresh Fruits.

Apples, Bellefleurs	75@90
Apples, Newtons	1.00@1.25
Apples, Spitzenberg	1.10@1.35
Cantaloupes, standard	40@1.40
Nutmegs, large, crate	50@8
Figs, layer, single	25@3
Grapes, Thomp. Seedless, crate	40@5
Grapes, Black	40@5
Grapes, Muscat, box	40@5
Grapes, Tokay	50@6
Pears, Bartlett, box	75@2.00
Peaches, box	40@1.2
Plums, box	40@6
Prunes, box	75@85
Quinces, box	50@85
Blackberries, chest	5.00@6.00
Loganberries, chest	4.00@6.00
Raspberries, chest	4.00@8.00
Strawberries	2.25@5.00
Pineapples, Hawaiian	2.00@3.50
Bananas	1.00@1.5
Watermelons, doz	1.25@2.0

Dried Fruits.

FRUITS—1911 crop, f. o. b., carload lots, per lb: Apples, 8@9½c; Apricots, 14@17c; Peaches, 9¼@11c; Prunes, bulk basis, 6@7½c; per lb, 4¾@10c; Figs, 4¼@5½c for White; Pears, 9½@12½c.

RAISINS—1911 crop: Seeded, per pkg—Fancy, No. 16, 7c; Choice, No. 16, 6¾c. Loose Muscatels, in 50 lb boxes—Standard, 4-crown, 6¼c; 3-crown, 5½c; 2-crown, 5c; Seedless Muscatels, 5½c; Sultanas, 6@6¼c; Thompsons, 7@7½c.

Nuts.

Walnuts, No. 1 Soft Shell	14
Walnuts, No. 1 Hard Shell	13½
Almonds, '10, N P U	16@16½
Almonds, '10, Nonp	18@18¾
Almonds, '10, IXL	16½@17¼
Pecans	14@17
Chestnuts, California	6@8
Peanuts	5@5½

Beans, Dried.

Limas	5.00@5.20
Pink	3.50@3.60
Black Eyes	3.50@3.60
Small White	3.85@3.90
Large White	3.70@3.75
Kidneys	4.50@4.60
Garbanzos	3.00@3.25
Bayou	3.40@3.65
Red Mexican	4.50@4.60
Horse Beans	2.75@3.00
Cranberry	3.30@3.75

Hops.

Hops, Coast, 1910	32@36
Hops, 1911	37@40
Hops, Oregon, 1911	37@40

Honey.

Water White, Comb, '11	15
Dark Comb	12½
Extracted White, '11	9@10
Extracted Dark	6½
Beeswax, lb	24@30

Hay.

We quote the wholesale prices in round lots on today's market as follows, viz.:

Scott, Magner & Miller say:

Arrivals of hay on the San Francisco market for the week ending today have amounted to 2,700 tons. This quantity is just about the same as we received during the previous week. The larger proportion of this amount consisted of alfalfa and low grades of grain hay, coming in by water from the bay and river landings, and did not in any way affect the market on grain hay coming in by railroad. Comparatively very little arrived by car from our better districts, although there are still a few lots coming in out of the fields.

Orders on shipping trade are being filled regularly, but in small quantities only, and there has been no inquiry for large amounts for export purposes recently.

The conditions in the alfalfa market have remained just about as they have been during the last few weeks. The weather has continued to be most advantageous for harvesting the late cuttings of alfalfa, which tends to considerably increase the output of this article for the season. A great deal of this hay is moving forward steadily and going into consumption and storage for later use. Prices are practically unchanged and trade very good. Our arrivals of alfalfa hay are coming in exclusively from the river districts.

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Fancy Wheat Hay	19.00@20.00
No. 1 Wheat or Wh & Oat	16.00@17.50
No. 2 Wheat or Wh & Oat	13.00@14.00
Choice Tame	15.00@16.00
Other Tame Oat	10.00@13.00
Wild Oats	10.00@13.50
Stock Hay	5.50@6.00
Alfalfa	9.00@11.00
Straw, bale	60@70

Grain.

Wheat	1.47½@1.50
Barley, fancy	1.90
Barley, good to choice	1.82½@1.87½
Barley, poor to fair	1.75@1.80
Corn	1.60@1.62
Oats, Red	1.70@1.75
Rye	1.47½@1.52½
Mustard, Brown	5½
Alfalfa Seed	18
Millet	3@3½
Flaxseed	5@5½
Broom Corn Seed, ton	30.00

Feed Stuff.

Alfalfa Meal	16.00@17.00
Bran, ton	28.00@29.00
Feed Cornmeal, ton	38.00@39.00
Cracked Corn	38.00@39.00
Rolled Barley, ton	37.50@38.50
Rolled Oats, ton	36.00@37.00
Middlings	32.00@34.00
Oilcake Meal	42.00@43.50
Cocoanut Cake, ton	24.00@25.00
Mixed Feed, ton	25.00@27.00
Shorts	29.00@30.00

Deciduous Fruit Market

F. B. McKevitt, general manager of the California Fruit Distributors, reports:

Sacramento, Oct. 21, 1911.

The following gives the number of cars of deciduous fruit shipped from all points in California for the week (7 days) ending Friday morning, Oct. 20th:

Peaches and plums will no longer be quoted, although belated reports would indicate that there are still a few of them moving. These cars will show up in the final report for the season, but as they have no place at this time, shipments will no longer be noted in these letters.

Pears, 32¼ cars. Movement of this fruit continues rather larger than expected. The shipment, however, is nearing its conclusion, and probably will not last more than another week.

Grapes, 567 cars. As indicated last week the grape movement is nearly stationary. It is probable that next week about the same quantity will go forward as during the past seven days. Tokays are nearing their conclusion; another ten days will see the crop practically all moved. Cornichons are offering in increased volume. Emperors are ready to pick, and will be shipped as soon as Tokays are out of the way. All grapes are of fine quality. Markets have improved generally, and there is a better feeling all around.

Weather continues fine.

Comparative statement of shipments up to Oct. 13th, 1911:

	1910	1911
Cherries	250½	215¼
Apricots	289¾	214½
Peaches	2517¾	2018½
Plums	1552½	1365¾
Pears	2354	2271¾
Grapes	3993½	4206¼
Sundry	15	13
Total	10,973	10,306

Citrus Fruit Market

LOS ANGELES, Oct. 25, 1911.

With auction markets taking Valencias at from $4 to $6 per box, the orange grower has no particular complaint, but the country over the condition is hardly as strong as last week. This is due in part to the receipts of Porto Rican and Florida fruit. That fruit is coming in in fairly good condition, and there has been only one confiscation of green fruit. This was in New York on a shipment from Porto Rico. There are probably not over 100 cars of California Valencias as yet to go. Reports from northern and central sections indicate earliest Navel shipments will begin going forward about November 1 or about the time the Valencia shipments cease.

Lemon shipments continue fairly liberal and at satisfactory prices. The big prices which obtained last year may not be secured, but the general condition is satisfactory.

Shipments.

Shipments of oranges to date since November 1, 1910, 36,725 cars; lemons, 6,667; total, 43,392. To same date last season: Oranges, 25,236 cars; lemons, 4,714; total, 29,950.

NEW YORK, Oct 23.—Ten cars Valencia, two cars lemons sold. Market strong on small sizes Valencias, easier on large sizes; lower on lemons. Weather fair.

Valencias.

	Avge.
Duquesne, Duquesne Ft. Co.	$5.40
Fort Pitt, Duquesne Ft. Co.	4.50
Old Mission, fy., Chapman	6.70
Old Mission, ch., Chapman	5.50
Golden Eagle, sr., Chapman	4.95
Lady Rowena, Chapman	4.80
Windemere, ch., Randolph Ft. Co.	4.45
Economy, ch., Randolph Ft. Co.	3.70
Premium, or., Benchley Ft. Co.	5.10
Superior, Benchley Ft. Co.	4.65
Sceptre, S. S. Ex.	5.75
Rooster, S. S. Ex.	5.10
Carmencita, S.T. Ex.	5.10
Nonpareil, Covina Ex.	4.85
Teal, Covina Ex.	4.50
Golden Cross, O.K. Ex.	5.15
Red X, O.K. Ex.	4.50
Squirrel, A.H. Ex.	4.00
Palm Tree, A.H. Ex.	2.95
Shamrock, fy., Placentia M.P.A.	6.60
Caledonia, Placentia M.P.A.	5.15
Albion, Placentia M.O.A.	4.60
Cambria, Placentia M.O.A.	4.10

Valencia—Halves.

Squirrel	$1.90

Lemons.

Euclid	$5.70
Flower	5.10
Windemere	5.80
Whittier	5.35
Pico	4.75
Trail	5.80

CINCINNATI, Oct. 23.—Cool. Market declining on Valencias and lemons; one car Valencias and two Floridas sold. Florida Brights, 2.25 to 2.65; Russets, 2.05 to 2.60.

Valencias.

Fuschia, S.A. Ex.	$3.15

ST. LOUIS, Oct. 23.—Clear and cool. Market firm on good fruit. Two cars sold.

Valencias.

	Avge.
Stag, A.C.G. Charter Oak	$5.35
Hunter, A.C.G. Charter Oak	4.60
Pointer, A.C.G. Charter Oak	4.55

Valencias—Halves.

Stag	$2.50
Red Riding Hood	1.95
Hunter	1.70

Lemons.

Foothill, AH, Arlington	$4.05
Pride of Cal., AH, Arlington	2.60
Housewife, A.H., Arlington	4.25

PITTSBURG, Oct. 23.—Three cars sold. Market strong on Valencias and lemons.

Valencias.

Pointer, A.C.G., Azusa	$4.15
Greyhound, S.A. Ex.	4.10
Hunter, A.C.G. Azusa	3.30

Lemons.

Standard, V.C. Lemoneira Co.	$4.75

BOSTON, Oct. 23.—Four cars sold. Cloudy. Market very strong.

Valencias.

	Avge.
Alta Cresta, A.H. Pach.	$6.25
Hobo, A.H. Pach.	4.05
Titus Ranch, fy., S Marino G.P.A.	3.50
El Toreador, sd., S Marino G.P.A.	3.05
Robusta, A.H. Pach.	5.60
Arch. ch., Hawarden C.A.	4.25
H.C.A.	3.15

Lemons.

Pet, S. A. Ex.	$5.40
Greyhound	5.15

CLEVELAND, Oct. 23.—One car Valencias sold. Market lower. Market weak on small sizes. Cold.

Valencias.

Searchlight	$4.55
S.S. brand	4.30

PHILADELPHIA, Oct. 23.—Four cars Valencias sold. Also part car lemons.

Valencias.

	Avge.
Alps, A.C.G., Glendora	$5.65
Hunter, A.C.G. Glendora	3.00
Stag, A.C.G. Azusa	4.80
Hunter, A.C.G. Azusa	3.55
Tustin Gem, Tustin P. Co.	4.85
Old Oak, Benchley	4.30
Home, A.C.G. Glendora	4.00

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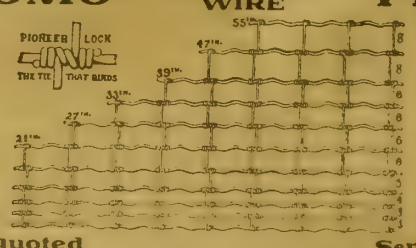

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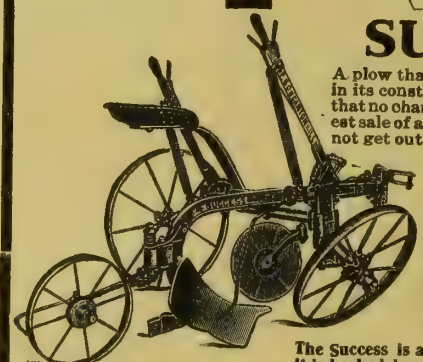

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California Cultivator

Vol. XXXVII. No. 18. LOS ANGELES: THURSDAY, NOVEMBER 2, 1911 One Dollar the Year

Importance of Irrigation Districts to California

An Address by J. L. Craig at the Annual Convention of the State Realty Federation at San Francisco

I carefully weigh my words, when I assert that the irrigation of the arid and semi-arid lands of the state is the most important subject now commanding public attention, relating to the development of the state's resources and the increase of its wealth. Consider momentarily the magnitude of the proposition.

The state of California embraces 101,350,400 acres. Of this area, not exceeding 35,000,000 acres is arable, of which 6,125,000 acres is now under cultivation. Of this cultivated acreage, approximately 5,065,000 acres is not irrigated, and 1,060,000 acres is under irrigation.

What of the products of these non-irrigated and irrigated lands? As nearly as can be determined from the statistics at hand the 5,065,000 acres non-irrigated lands produced in 1910 land products having a value of $140,047,000, an average of $27.60 per acre; while the value of the products of the irrigated lands was $163,521,000; an average of $154.50 per acre.

Had the people of the state, particularly its bankers and capitalists, also the state itself, through its legislators and executive officials, given during the past twenty years the attention to the promotion of the building of irrigation works, which the importance of the subject demands, an area at least equivalent to the entire 6,125,000 acres cultivated in 1910 would have been irrigated, with the result that the value of the farm products for that year, instead of totaling $303,568,000, would have exceeded $900,000,000. Can you estimate the effect of this 200 per cent increase in the value of the land products upon the expansion of the state's manufacturing, mercantile, transportation, commercial and financial interests? Do I exaggerate, when I state, that the irrigation of the arid and semi-arid lands of the state is the most important subject now presented for public consideration?

Returning to the 35,000,000 acres arable lands embraced in the state, of which about 6,000,000 acres are now cultivated, it is estimated, that not exceeding 15,000,000 acres can be irrigated, and such maximum area only when the surplus winter waters are carefully impounded for use during the irrigation season and the water is economically distributed, as to quantity, on the lands. The problem which confronts the people of the state is the construction of storage reservoirs, dams and irrigation systems, which will furnish and place water on the 15,000,000 acres of land.

Are there any favorable conditions affecting the propositions? I mention:

First—Economy of construction, owing to the adaptability of the sections supplying the water, to the construction of dams, reservoirs, main canals and laterals. The average cost of these works, owing to the topography of the country, is, in Colorado, Idaho, Wyoming, New Mexico and other states and territories, $35 to $40 per acre of lands irrigated; while in California the expense is from $15 to $25 per acre.

Second—Great fertility of the irrigable lands. No great body of such lands approaches in fertility the 11,000,000 acres located in the great Central Valley of California. The resultant exceeding productiveness of the lands enables the landowner to readily pay the yearly charges accompanying the distribution of water on his land.

Third—And most important, the best statute extant providing for the construction of irrigation systems. I refer to the "Bridgeford Act," which was enacted in 1897 and which replaced the "Wright Act," under which public irrigation systems had been constructed during the preceding decade.

Briefly, the "Bridgeford Act," authorizes the landowners of a section, the boundaries of which are determined by these owners, to organize such section into an irrigation district. The qualified voters of the district then elect a board of directors and, also, an assessor, tax collector and treasurer. The board of directors administers the affairs of the district in accordance with the provisions of the statute. The tax collector and treasurer are under bonds for the faithful discharge of the duties of their respective offices. When the organization of the district is completed, an engineer is employed to survey, plan, lay out and estimate the cost of the irrigation system.

All irrigation districts organized after May 10th, 1911, are placed under the jurisdiction of a commission, composed of the attorney general, the state engineer and the superintendent of banks. This commission passes upon the feasibility of the irrigation districts' systems and determines the amount of bonds to be issued by each district. These bonds are to be registered with the state controller.

The board of directors, upon receipt of the commission's report, calls an election, at which the question of the issue of an amount of bonds sufficient to meet the expenses of constructing the irrigation system is submitted to the voters of the district. If a majority of the votes cast are affirmative, the bonds are issued. The bonds are serial, maturing in twenty to thirty years and bear 5 per cent interest. They are a first lien on all the lands in the district. The board of directors has power to levy taxes to meet the interest on the bonds and administrative expenses of the district. In the event of non-payment, the property against which the tax stands is sold, as is the case when county and city taxes are not paid.

The irrigation district organization has the following advantages:

First—It is a system of local self-government. Therefore, the business of the district is wisely and economically administered.

Second—The expense to the landowner per acre for the water used is much less than when distributed by private corporations. The charge to the district irrigationist averages from $2 to $3 per acre annually; while the corporation irrigationist usually pays yearly from $4 to $7 per acre.

Third—When all bonds issued for the construction of the works are paid, as must be the case by the expiration of thirty years, the district, i.e., the landowners, own the irrigation system free of incumbrance.

Yet, notwithstanding the great advantages provided by the "Bridgeford Act" for the construction of irrigation systems, it must be regretfully acknowledged, that but five irrigation districts, organized prior to July 1st, 1911, embracing less than 430,000 acres (the systems of two of these districts containing about 140,000 acres being yet uncompleted), exist in the state. This, outside of the very recent organization of two additional districts, is the net result of the operation of the "Bridgeford Act" covering a period of nearly fifteen years—an average of 30,000 acres brought under irrigation per year. At this rate, 500 years will be required to place water on the 15,000,000 acres irrigable lands within the state.

The question naturally arises—Why this unsatisfactory condition? Why this slow, snail-like progress? Before answering, it may be stated in a preliminary way, that it is evident that the construction of irrigation district systems depends upon the receipt of proceeds from the sale of the district's bonds and that if the bonds are not sold, the work of constructing the irrigation systems cannot proceed. As a matter of fact, irrigation district bonds have during the past fifteen years, only been marketed with great difficulty in comparatively small volume, at low prices, considering the high quality of the securities.

The principal reasons for the situation just described are these: Prejudice against irrigation district bonds arising from the failure of several districts organized twenty or more years ago under the "Wright Act;" the organization in the Rocky Mountain states during the past five years of illy-advised and over-capitalized private irrigation corporations, which have defaulted the interest on their bonds; the opposition of the bank officials and the bond dealers of the state to irrigation district bonds, and the indifference, one might say apparent animosity, of some of the administrative officials of the state to these securities.

It is of no avail to say that what occurred twenty to twenty-five years ago should not now militate against the bonds; that the failure of private irrigation companies in other states should not affect securities issued by a municipality of this state; that bankers and bond men should rise above a desire to hold the market for the bonds of corporations in which they have a financial interest and that public officials should be so impervious to the sometimes almost intangible influence of a desire to stand well for political reasons with the "money power," that only consideration for a rapid and unparalleled development of the agricultural resources of the state should determine their action in reference to the securities of irrigation districts. But unfortunately, it is a condition and not theories of why the situation should be different than it is, that confronts us.

Can the situation be improved? I reply, there are two lines on which practical results can be produced.

First—Show your banker and capitalist friend that no better securities than irrigation district bonds are issued in the state, and as proof, call his attention to the fact that no existing district is in default in the interest on its bonds, and that fully $1,000,000 of the bonds of the Modesto, Turlock and Alta districts, issued in 1902, are held by merchants, bankers, farmers and other business men of these districts; also, point out to the banker and the capitalist the necessity of establishing a market for the bonds, in order that irrigation district systems may be constructed, to the end that the development of the agricultural resources of the state may add tremendously to its business activity and wealth.

Second—Use your influence to induce certain of the state officials to execute the provisions of the statute known as the "Irrigation District Bond Act," approved by the Governor March 10, 1911. This act was intended by the members of the legislature, speaking for the people of the state, to broaden and increase the market for irrigation district bonds. To accomplish these results, the bill provides:

First—That the bonds shall be legal investments for all trust funds, and for the funds of all insurance companies, banks, banking institutions and trust companies and for the state school funds, and

Second—That the bonds may be used or deposited by banks, with the state treasurer and county and city treasurers as security for public moneys.

(Continued on Page 421.)

Citrus Trees Exclusively

We have to offer for planting season of 1912 an excellent stock of strictly first-class Citrus trees in all varieties.

REMEMBER, MR. PLANTER, we have had twenty-one years of experience in the successful propagating of Citrus trees, and while our prices might be a little higher than our competitors, we absolutely guarantee our trees true to name. We are in the business to stay; hence, can back up what we say.

THINK WHAT THIS MEANS TO YOU. The average nursery is in business today and out tomorrow, so you have no recourse should anything go wrong. In addition to guaranteeing our trees true to name, we select our buds only from best individual fruiting trees, which would eliminate the possibility of having non-fruiting trees, or poor bearers in your grove. We follow the same plan of bud selection as the government experimental work.

Our trees are all budded from 3 to 7 inches above the surface of the ground, which will eliminate any possibility of planting the bud union below the surface of the ground. This particular point should receive due consideration.

Our booklet, entitled "Citrus Fruits," mailed to any address on receipt of 25 cents; credit given for this amount on first order.

Write us today for prices and information. All correspondence most cheerfully answered.

San Dimas Citrus Nurseries

SAN DIMAS, CAL.

Citrus Trees

First quality trees will be scarce in 1912

The man who plants an orange or lemon grove is planting for a lifetime. Poor trees cannot be considered at any price if he wants good results. A few cents per tree saved at time of purchase often costs dollars per tree in after years.

Why not buy the best? The quality is there and remains long after the price is forgotten. We offer a limited quantity of strictly first-class, healthy trees, one year old buds, for 1912:

6500 Eureka Lemons
2000 Villa Franca Lemons
9000 Washington Navels
750 Valencias
500 Marsh Seedles Grape Fruit

Budded on sour stock roots, grown in loose soil, clean, vigorous trees, guaranteed true to name. These trees have been carefully grown, are straight, and extra care was taken in selecting buds from the best fruiting trees, the parent stock which is of proven prolific habit—thus insuring good bearing trees.

Longer life through seed and bud selection. The above cut shows what these trees were at the time of budding, October, 1910, measuring four to five feet high. The trees now show for themselves. A large portion of them measure from five-eighths of an inch to three-quarters of an inch and have been pronounced by experts to be the finest bunch of one year trees they have ever seen.

We invite inspection and comparison, and solicit correspondence. We will sell these trees at current prices. We will refund traveling expenses to any out of town purchasers. Twenty years experience in expert citrus horticultural work.

Dewey-Greenleaf Citrus Nursery

Telephone Chas. Dewey, residence phone "Sunset 113 R." | Twenty-sixth and Mountain Ave., Upland, San Bernardino County, Cal.

N. B.—These trees will pass inspection—no scrubbing.

Orange and Lemon Trees

Fifty Thousand High Grade Trees

SMITH AND CLARK COMPANY

PHONE 37 R 2 — **Orange, California** — R. D. 1

When writing advertisers, mention Cultivator.

Citrus and Tropical Fruits

COST OF AVAILABLE NITROGEN.

E. B. Voorhees shows in a bulletin of the New Jersey Experiment Stations that 40 per cent of the total amount annually expended for fertilizers in that state is paid for nitrogen, and this is probably typical for all regions where fertilizers are generally used. Moreover, nitrogen is the only one of the three essential elements of plant food likely to suffer any considerable loss in use, not more than 70 per cent of the nitrogen applied in the best forms being recovered in crops. There are no such losses of phosphoric acid and potash.

"From the standpoint of crop it is evident that the utilization of nitrogen is a much more important matter than the use of phosphoric acid and potash, although the further fact that a pound of nitrogen, capable of being used in a commercial fertilizer, and without regard to form, costs from four to five times as much as a pound of 'available' phosphoric acid or of potash, is an additional argument in favor of greater care in its purchase and use.

"Nitrogen as nitrate is the only commercial form soluble in water, ready for immediate use by most plants. Nitrogen as ammonia is also a form soluble in water, but it is less available than the nitrate. A pound of nitrate and a pound of ammonia, being definite chemical compounds, are quite as good from one source as another.

"Organic forms of nitrogen have to decay first, changing to ammonia and then to nitrate, and are therefore less quickly available; besides, they vary in their rate of availability according to the source of supply and their physical character. Materials which are likely to decay quickly, as dried blood, dried meat, dried fish, and cottonseed meal, do show a high rate of availability, while forms like ground leather and ground peat show a very low rate of availability. A pound of organic nitrogen varies in availability, therefore, according to its source, whether derived from dried blood or peat or from intermediate products.

"Since nitrogenous materials are variable in their rate of availability—that is, the rate at which the nitrogen in them may be absorbed by the plant—the farmer desires to know the dependence that can be placed on the different materials He wants available nitrogen. Hence the chemical and physical characteristics of the various forms of nitrogen have been made the subject of very considerable study and investigation, in order that at least approximate values in respect to availability may be attached to each form. Sufficient work has been done thus far to establish a pretty safe relationship between the nitrate, ammonia and organic nitrogen, in the form of dried blood."

The results of comparative experiments by the New Jersey Station show "that the recovery for nitrogen as nitrate was 62.09 parts per hundred; for the nitrogen as ammonia, 43.26 parts per hundred; and for organic (dried blood) nitrogen, 40 parts per hundred."

"With the returns from nitrate, the highest recovery regarded as 100, the relative availability of the nitrogen as ammonia would be 69.7, and of nitrogen as dried blood 64.4.

These figures possess a very great practical significance, as they have a direct bearing upon the economical purchase and use of the nitrogen contained in the fertilizers now offered upon the market.

"Commercial conditions fix the price of the various nitrogenous materials, and the cost to the farmer of any one form is not measured by the usefulness to him, but by the cost in the market. That is, there is no strict relationship between commercial and agricultural values.

"It happens that at the present time a pound of nitrogen in the form of nitrate or of ammonia costs the farmer less than a pound of organic nitrogen; that is, the nitrogen possessing the highest rate of availability as nitrate is less expensive to him than dried blood nitrogen, or even that derived from low grade nitrogenous materials, which do not possess any definite rate and which must, on the average, show a much lower rate of availability than dried blood, because the mixtures contain nitrogen derived from many sources, not uniform in their content of nitrogen or in their physical character or constitution.

"The experiment station has since its establishment consistently urged the farmers, in their purchase of fertilizers. to be guided not only by the quantities of the constituents present in the mixtures offered, but also by the kind that is used in them, pointing out the importance of selecting brands which contain high percentages of available plant food, more especially of nitrogen, because of its relatively greater importance or its higher cost."

The station does not discourage, but strongly encourages, the use of waste products containing nitrogen, but it insists that—

"The cost to the farmer of a pound of nitrogen in these materials, of a value lower and more variable than the nitrate and ammonia, should be lower rather than higher than for nitrate or ammonia.

"It is not economy to save refuse nitrogenous materials if the cost of the nitrogen to the farmer is greater and his returns less than may be obtained by the use of nitrogen from materials of known value. Farmers have been and are now spending thousands of dollars for nitrogen for which they do not receive a proportionate return.

"To the farmer it is purely a business proposition. He buys nitrogen in order that he may get a return in crop. If in one case 100 pounds of nitrogen contributes 60 pounds to the crops upon which it is applied and another 100 pounds contributes but 40 pounds to the crops, the purchaser should not pay the same for the second as for the first, for if he did so he would pay 50 per cent more per pound for his 'available' nitrogen. That is, if the cost of the first hundred pounds were $15, the second hundred should cost but $10 when the basis of value is the amount available in each."

I know of no more encouraging fact than the unquestionable ability of man to elevate his life by a conscious endeavor. It is something to be able to paint a particular picture or to carve a statue, and so make a few objects beautiful; but it is far more glorious to carve and paint the very atmosphere and medium through which we look, which morally we can do.—Thoreau.

THE CONTROL OF CITRUS PESTS IN ARIZONA.

By A. W. Morrill, Entomologist.

While the control of citrus pests, except as applying to the citrus thrips, grasshoppers and a few minor pests, is not a subject of immediate importance in Arizona, a brief outline of the methods employed in Florida and California should be of general interest. It should also provide no little encouragement to citrus growers, especially those who are now getting their first experience in this line, for it should emphasize the fact that Arizona's present advantages in not having serious pests to require a perpetual tax on citrus growers more than offsets the troubles which have to be contended with in comparatively new citrus growing regions.

Methods of control of citrus pests may be included under the divisions of spraying, fumigating and the use of natural enemies. Other methods are sometimes of importance in special cases, but in general they should be considered only as adjuncts to the divisions mentioned. In the application of the various remedies, best results are secured when the insects to be treated are thoroughly understood. In spite of the many years during which most of the important pests have been under investigation from time to time, new discoveries are continually being made by investigators, and the remedies in each case are becoming better adapted and better understood.

Spraying is the oldest general remedy for citrus pests. In the case of most citrus insects it is a much less satisfactory process of control than fumigation. It usually requires three or four applications of spray to accomplish as much as would one fumigation, and the economy in the long run favors the latter process. In Southern California a distillate oil spray was used extensively a few years ago, particularly against the black and red scales, but much injury to trees resulted, and today comparatively little spraying is done in citrus groves in this section of the state. In the central part of the state spraying is coming into use in Tulare County in the control of the citrus thrips. A mixture composed of a tobacco extract combined with a weak distillate oil emulsion is used, several applications during the season being required.

In Florida spraying has been used to a considerable extent against citrus insects. In the case of scale insects, parasites or contagious diseases of the insect can usually be relied upon to reduce the damage to a point which makes spraying unprofitable. Sporadic outbreaks occur, however, which result in severe losses unless spraying or some other direct remedy is resorted to.

Fumigation for citrus pests was first practiced about twenty-five years ago. Today this remedy costs the citrus growers of California an amount estimated at more than a million dollars per year. During the year ending October 1, 1906, in a single county, Los Angeles, according to the official report of the County Commissioner of Horticulture, about $300,000 was expended in fumigating.

In Florida fumigation is now coming into general use, and doubtless will be extensively used in the future. The Florida method, first used in the fall of 1907 in connection with the white fly investigations of the United States Department of Agriculture, has so simplified the process that uniformity of results can be attained without previous experience. This method consists of a fumigating tent marked with graduated stripes for use in connection with a form of dosage table adaptable for use against any insect. With this as a basis, it is a simple matter for an experimenter to determine the dosage requirement for any particular pest, although previously it was impracticable to give any specific recommendations as to dosage. This Florida process is now coming into general use in California, and, according to the report of the Entomologist of the United States Department of Agriculture for 1909, it will eventually result in an annual saving of from 30 to 50 per cent of the former cost of fumigation.

The so called natural enemies of citrus insect pests include fungus parasites, predacious insects and parasitic insects. The fungus parasites are partially effective in Florida and other Gulf Coast citrus growing regions, but experimental work has so far failed to show the practicability of increasing the efficacy of these fungi by artificial means.

Of the predacious insects, several imported species of ladybugs are notably successful in California in checking citrus pests, and their value is inestimable. Control by means of true parasites has not met with complete success so far in any instance, but important work in introducing parasites of several scale insect pests is now in progress under the supervision of the state insectary at Sacramento.—In Circular No. 5 of Arizona Entomologist.

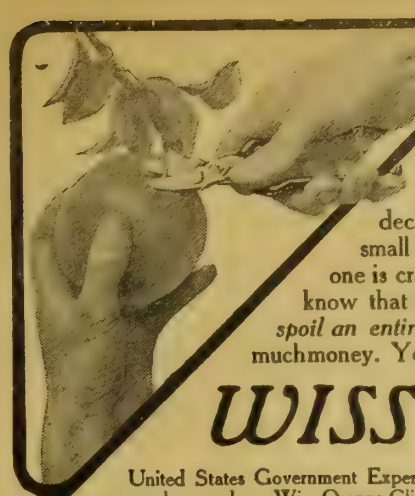
OUR UNDERGROUND WATERS.

Water is found in some amount in all formations below the earth's surface, from the loosest and most porous sands and gravels to the hardest slate and granite. The amount varies from the merest trace chemically combined in the molecules of the rocks to immense reservoirs which supply wells flowing hundreds of thousands of gallons a day. Some waters are so pure that a refined chemical analysis shows only minute traces of organic and mineral matter; others are so heavily charged with minerals or other impurities as to be unsuitable for use.

The slope of the surface at any point is one factor determining the amount of water absorbed by the ground. The direction and amount of slope also determine the form of the water table—that is, of the upper limit of saturation. Except where the surface is flat the water table is generally not parallel with the surface; it is almost invariably farthest from the surface on the summits of hills and mountains and nearest to it in valleys and along the coast, reaching the surface in swamps and along rivers, lakes, and beaches. The surface of the water table is always in motion, its higher portions flowing toward the lowest outlets along rivers or the sea. This direction of flow explains why fresh water is usually found when a well is dug in a sandy beach.—From Water-Supply Paper 223, United States Geological Survey.

Pleasure is the happiness of the animal nature; joy, of the social nature; blessedness, of the spiritual nature. Pleasure we share with the animals; joy, with one another; blessedness, with God.—Dr. Lyman Abbott.

The heroes are not all six feet tal,,
Large souls may dwell in bodies small.
The heart that will melt with sympathy
For the poor and weak, whoe'er it be
Is a thing of beauty, whether it shine
In a man of forty or a man of nine.



Stop *Bruising* Fruit and *Losing* Money.

Every time your clippers pierce an orange's skin you open the way to decay. Usually the cut is too small to *notice*—and the bruised one is crated with the good. *You* know that *one decaying orange may spoil an entire crate*—you lose just that much money. You *won't* bruise fruit if you use

WISS ORANGE CLIPPERS

United States Government Experts and leading citrus growers everywhere endorse Wiss Orange Clippers because they *know by experience* Wiss Clippers *last longest, do best work* and *save money* by *minimizing* the liability of bruising the fruit.

The blades are specially curved and ground—the points and outer edges are smoothened and rounded to avoid bruising. Handles are shaped to prevent tiring of the hand. Wiss Orange Clippers will give years of service — and are unrestrictedly guaranteed to give satisfaction. *For sale by all dealers.*

Wiss Solid Steel *Pruning Shears* will snip a broom handle and cut the most delicate tendrils. All parts are interchangeable and any broken parts can be readily replaced. 9-inch size, $2.25.

J. WISS & SONS CO., 15-33 Littleton Avenue, Newark, N. J.

Good Citrus Trees

Expert grown, large, clean stock, up to size now, for 1912 spring delivery. None better anywhere. Our buds are selected with greatest care from best individual fruiting trees and positively guaranteed true to name.

250,000 Seed Bed Stock

Sour, Sweet or Pomelo—the ***McMillan grown*** kind—large clean plants from selected seed—the kind it pays to plant. Inspection and correspondence invited. Closest nursery to Los Angeles. Alhambra car.

McMillan Citrus Nurseries

Growers of Citrus Trees exclusively
Ten years in business and here to stay

Main 732—Home 3222 ***300 So. Marengo Ave., Alhambra, Cal.***

High Grade Citrus Trees

Selected Buds on Vigorous Roots

Our trees always prove true. Send for Catalog.
Place orders early and get choice stock.

POLLARD BROS.

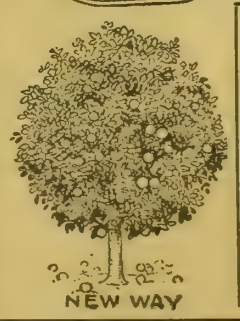
Alhambra Ex.
Main 13, or Black 183

Corner Mission Street and Los Robles Ave.

South Pasadena, California

EXCELSIOR TREE SUPPORT

Hooks are made of Flat Steel, 1¼ Inches Wide—6ft. of Wire.



NEW WAY

Makes Propping Unnecessary
Insures Branches Against Breaking
Lifts the Lower Limbs
Makes the Fruit Grade Higher

Guaranteed to hold 250 lbs. Hooks swing on themselves and not on the limbs. Cannot bind the limbs.

Price: $12.50 per 1000 hooks
Wire extra. F. O. B. Pomona, California.

Ranchers Mfg. Co.
POMONA, CAL.

OLD WAY

THE BEST IN THE WORLD; HAS NO EQUAL

The Original R.I. Knapp Side-Hill Plow

Orchard and Vineyard Plow received first premium at State Fair.

If you cannot get our plow send us the name of your dealer and we will see that you are supplied. Has given entire satisfaction for over thirty years. Equally as good for valley as hill sides. We manufacture five sizes—from one-horse orchard and vineyard plow, to the strongest grading plow.

SAN JOSE, CALIFORNIA **H. G. KNAPP & SON**

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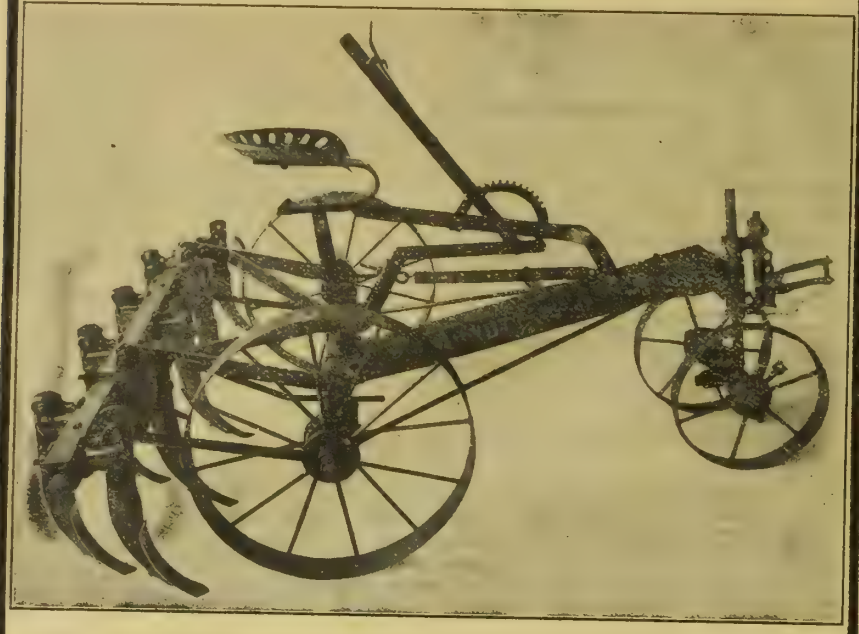


More sold than any other make. Originated and designed by California Orchardists to meet the demands of this section.

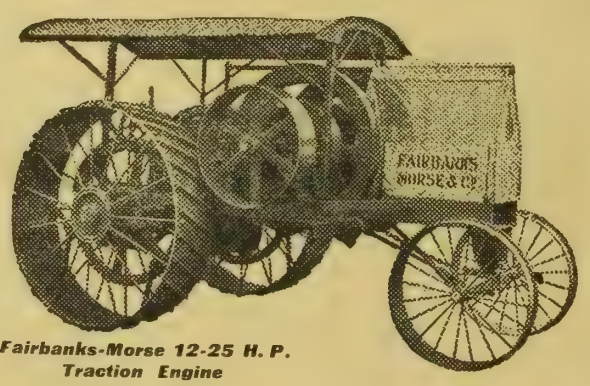
Sold by Leading Dealers Everywhere or Direct by the Manufacturers

ARNOTT & COMPANY

112-118 South Los Angeles St. LOS ANGELES

That Engine is the *simplest*, and most *durable* and *easily handled tractor* on the *market*

Write For Catalogue LA 37



Fairbanks-Morse 12-25 H. P. Traction Engine

Consult us about your water problems. We have the most competent corps of irrigation machinery engineers in the world

Its drawbar pull is equal to twelve horses. When used as belted engine 25 H P. can-be developed.

Our 2-Cylinder, 4-Cycle Engine will operate on 3c distillate, as good as with the best gasoline.

We Are Absolutely Headquarters for

Gasoline Engines, Hand and Power Sprayers
Hand, Windmill and Cistern Pumps
Irrigation Machinery of Every Nature

FAIRBANKS-MORSE & CO.

Makers of Fairbanks Standard Scales

425 East Third St. Los Angeles, Cal.

Prosecutions are about to begin on the owners of ground squirrels of Kings County.

A large tract of land lying near Cucamonga and Uplands is to be subdivided and sold in small holdings.

Deciduous Fruit Culture

THE CANNING BUSINESS.

In 1817 William Underwood arrived in New Orleans from London, where he had learned the trade of preserving and pickling. The climate of the South not being to his liking, he walked from New Orleans to Boston, and there he and Charles Mitchell began the preserving of pickles, sauces, jams and fruits. They used glass jars, but these were both expensive and fragile, so tin cans were substituted by Thomas Kensett in 1825. This appears to have been the initial stage in this country of the business which has grown so great. Various improvements have been made from time to time in the methods of manufacture, but the principle of Appert has not been changed.

Tomatoes, called "love apples" by Appert in his work on canning, were first packed for commercial purposes by Harrison W. Crosby in 1847, at Jamestown, N. Y.

ears can be fed into the machine. The corn then goes through the silking machines, where a considerable part of the silk not removed in husking is separated.

From the silker it passes to the steam cooker, where the syrup is added, and the mixture undergoes a cooking process. The cooker then takes the cans from a chute and automatically fills them with corn, the machine being so regulated that the same amount of corn goes into each can. The cans are then wiped, and the caps put in place and passed on to the power capper. This power capper, which is a machine having six or twelve capping irons, solders the caps on the six or twelve cans as quickly as a man could cap one by the old hand process. But even this satisfactory method of automatic capping and soldering is now being displaced by the operation of a machine that caps the cans effectually and hermetically

A San Joaquin County Orchard.

Owing to many adverse conditions the business was of comparatively small importance until about 1850. During the next few years the development was rapid and the variety of goods packed increased, and included fruits, vegetables, oysters, fish and meats. Maryland soon became the chief center of the industry, but Maine, New York and New Jersey were also prominent. California and the states of the Middle West show a large growth in recent years, and the industry is fast expanding to all parts of the country.

The principles first employed in canning processes have continued to the present time; it is in the invention and use of labor saving devices that great advancement has been made. As an instance, at first corn was cut from the cob by hand and placed in the can together with a small quantity of syrup or water, to which sugar and salt had been added. The tops were then soldered on by hand, with the use of a tinner's copper, and the cans placed in the cooking kettle, where they were left in boiling water for from thirty to sixty minutes. A small hole was then made by pricking the can and the heated air and vapor allowed to escape, after which the can was again sealed and returned to the kettle of boiling water, where it was necessary to keep it for several hours.

Canning by Machinery.

This method of operation is now entirely obsolete. The continuous cutters of the present time are run by power and cut the corn from a continuous stream of cobs as fast as the

without solder, simply by twisting or turning together the edges of the tin so tightly as to exclude air. This applies to cans for all kinds of sealing.

Each cap has a small hole or vent in the center, left to permit the escape of steam during the capping process. This hole is then closed with a drop of solder and the can inspected for leaks. They are then passed on to the steam process kettle, where they are heated to a degree and for a length of time sufficient to insure the destruction of all living germs. The degree of heat and the length of time necessary to accomplish this varies according to the kind of goods in process.

Application of Heat.

Green corn requires the highest degree of heat for its preservation and strawberries about the lowest, the amount of acid present having much to do with this difference.

In the early days of the canning industry this processing was done in pans set on brick arches; these in time gave way to the steam boiler or open retorts. But the boiling point was the greatest heat to be obtained by such methods, and some kinds of canned goods required a higher temperature to insure their preservation. This led to the closed steam retorts of the present time, in which any desired temperature can be obtained. By the use of the closed retort corn is now subjected to a temperature of approximately 250 degrees Fahrenheit, and requires only about an hour for processing where it required from five to six hours by the old method.

Early canning was done in pack-

ages of glass or pottery, but because of its greater cost and the increased care necessary for their use in packing process and their impracticability for transportation on account of their weight and liability to breakage, the extraordinary growth of the canning industry is due in no small degree to the invention of tin cans.

New York leads in canning corn, apples and pears. New York and California between them do about 90 per cent of the fruit drying. Maryland, in addition to oyster canning, does a great deal of canning of tomatoes, peaches, peas, lima beans, corn, pineapples and pears. Most meats are canned in the cities where the great slaughter houses are located, and the fish in the seacoast towns and cities.

The canning of lobsters and mackerel was begun at Eastport, Me., in 1843. Salmon canneries were started on the Columbia River in 1866, and at Kiawak, old Sitka and Cook Inlet, Alaska, in 1878 and 1882. The labor there is chiefly performed by Chinese. Next to this business on the Pacific slope, the most important is the sardine canning, in Maine. Sardine is a name generally applied to small fishes. The best known are the young of the pilchard (France) and of the sea herring of the Maine coast. They are first fried in oil and then canned in oil.—New York Times.

A TOAD'S BUSY EVENING.

It is well worth your while some evening in summer to watch a toad going about his business. Let me describe his methods to you. Watch in the evenings, when he comes out from the cool place in the soil where he has spent the day, and see what he does.

First he will look around and see what the weather is going to be like, and, if it suits him, he will start off on his rounds. He is regular in his habits. You know there is a peculiar dignity about a toad that always reminds you of an alderman. You never see a toad smile. The lower the intellect of a creature the less it laughs. The toad then marches off to the nearest place of refreshment, a post, a bush or a stump, or something of that kind, to which he knows insects resort, and then you see him place himself in that sort of attitude we used to assume when boys and girls: "Shut your eyes and open your mouth, and see what God will send you." Presently an ant walks up the post, there is a quick motion and that ant has gone to join the great majority. Another one passes up, there is another quick movement, and that insect has gone also. You might look for a long time and you would not see how it is done. A toad's tongue is highly specialized, differing from any other animal's the tongue is hung in front and wags backward.

And so the toad goes round his night's work from one place of refreshment to another until, as daylight comes, like a city representative again, he goes home full, but it is full of insects which would have done an enormous amount of mischief. Therefore, he has spent his night usefully.

His good work goes on day after day, and yet we despise him. If a man see him, he kicks him out of the way. Another man says, "Do not touch him, he gives you warts." He will not give you warts; he needs all his warts in his own business. This sort of remark and others are said about the inoffensive toad, simply because he is not beautiful. If we were judged by our beauty, how would we come out? Even the most insignificant forms of life have their part to play in nature, all of them assist in carrying out that most important of nature's laws, the maintenance of the balance between all forms of life; and where we interfere we invariably do it to our own injury.—American Cultivator.

APPLE SHOW IN WINDOWS.

The second annual apple window display held in Walla Walla, Wash., will be given under the auspices of the Commercial Club during the week of October 30-November 5. This is a novel plan of getting interest in the apple industry, and at the same time advertising the country as an apple district.

Three prizes, of $25, $15 and $10 are offered to the merchants of the city for the best decorated windows during the week, apples to make up at least half the material used in the decoration. Allowance is made for the shape and size of the windows, so that the smaller stores have an equal chance with the larger ones. The windows are marked on points, as follows: Attractiveness, 40; originality, 20; most advantageous use of apples, 10; inexpensiveness of display, 10; arrangements of signs, show cards, etc., 10. The judges will be men brought in from outside cities.—Harold Ellis.

IMPORTANCE OF IRRIGATION DISTRICTS.

(Continued from Page 417.)

The superintendent of banks holds that savings banks, the greatest probable purchasers of the bonds, cannot buy them. He is nullifying a perfectly plain provision of the statute.

The governor, controller and state treasurer determine the bonds which shall be accepted by the state treasurer as security for state money. An application for a deposit of state money on Turlock Irrigation District bonds (securities upon which the interest has been promptly paid for nearly ten years) was made by a San Francisco bank nearly sixty days ago. The application has not yet been granted. Write the superintendent of banks, asking him why he will not permit savings banks to purchase irrigation district bonds. Write the governor, the controller and the state treasurer, asking why Turlock Irrigation District bonds have not been accepted as security for a deposit of state money. Ask your local newspaper to publish the facts. Public officials cannot withstand public sentiment when it demands what is right, particularly when the action demanded of the official will exceedingly advantage a great public interest.

The problem at hand is the building as rapidly as possible of irrigation district systems, which will irrigate 15,000,000 acres of arid and semiarid lands. An average of 500,000 acres per year will accomplish the result in thirty years. This involves the marketing of $12,000,000 to $15,000,000 bonds per year—not a large amount when measured by the volume of money yearly seeking safe securities as an investment. A market must, as already stated, be developed for these irrigation district bonds before the work of constructing the systems can proceed.

The immediate and pressing need is the marketing of the bonds now in the irrigation districts' treasuries. It is necessary that these bonds be sold, in order to furnish money with which to complete the South San Joaquin and Oakdale irrigation systems and to extend the Turlock system. The banks of the state, possessing as they do over $100,000,000 assets, could readily purchase the $3,932,900 bonds—less than one-half per cent of the banks' resources—particularly since the absorption of the bonds will extend over a two-year construction period—an average of under $175,000 per month.

Concretely stated, what would be the result of the irrigation of the 15,000,000 acres? I answer, an increase in market value of, say, from $20 per acre, or $300,000,000, to at least $150 per acre, or $2,225,000,000—an increase from $300,000,000, the present yearly value of the land products of the state, to $1,500,000,000, and the addition of not less than 3,500,000 to the state's agricultural population, besides at least 1,500,000 added to the urban population through the increased business of cities and towns.

I have been in touch with the Modesto and Turlock Irrigation Districts since the water was placed upon the lands in 1902. During this ten year period I have noted an advance in the price of lands from an average of $10 per acre to more than $100; the yearly value of the land products increase from a scant $2,000,000 to over $8,000,000; a growth in population of the districts exceeding five fold, and that where only hamlets were, thriving cities stand, I have seen and I know.

These statements are given you with the hope that the welfare of the present land owner and future colonists shall be carefully guarded. The state of California, through its various promotion bodies, spends hundreds of thousands of dollars annually to induce homeseekers to locate within its borders.

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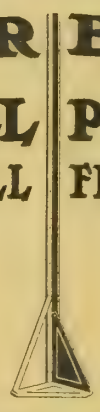

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Small Fruits and Vegetables

THIS MONTH.

Strawberry plants may be set this month, though the greater number will be planted through next month or possibly January. Other small fruits should have the dead canes pruned out and in the latter part of the month replanting may begin. All the hardier plants, such as celery, cauliflower, cabbage, parsnips, salsify, beets, radishes, rhubarb plants and peas, may be planted. Heavy manuring of the garden will put it in good condition for early planting of next month and January. For the early planting most thoroughly rotted manure should be used. For the later spring planting strawy manure may be plowed under and will put the ground in excellent shape.

Rubbish should be raked up and burned, or if preferred for composting old vines, should be thrown into the heap and kept thoroughly wet. It is wise, however, to use these vines on orchard or other fruits, as sometimes fungus troubles are carried to the next crop because of such use of last year's vines.

SEEDS FROM FOREIGN LANDS.

A high record importation of twenty million dollars' worth of flaxseed in the fiscal year 1911 is indicated by the records of the Bureau of Statistics, Department of Commerce and Labor, now completed for the ten months ending with April, 1911. During that period the imports of flaxseed or linseed, aggregated 8,250,000 bushels, compared with a little over 3,000,000 bushels last year and 53,000 bushels in the corresponding period of 1909. The growth in value is even greater, the ten months' figures of the current fiscal year being 16¾ million dollars, against five millions in 1910 and but $73,625 in 1909. The estimated importation of $20,000,000 worth of flaxseed in the fiscal year which ends with the present month exceeds by more than $10,000,000 the value imported in 1909, is nearly $18,000,000 above the record of 1901, and is by far larger than that of any other year. During the ten years 1901 to 1910, inclusive, a total of $13,000,000, or an average anunal importation of $1,300,000 is shown, as against $20,000,000 for the single year 1911 now drawing to a close.

Flaxseed furnishes the bulk of the $28,000,000 worth of seeds of various kinds imported during the year. The other leading classes include sugar beet, clover and castor beans. Of these, the imports of clover seed during the year will be about $3,000,000 dollars, and those of sugar beet and castor seed, each about $700,000. The remaining $3,750,000 worth of seeds imported includes grass, mustard, beet, cabbage, poppy and flower seeds, also a large number of seeds valued by reason of the volatile oils and perfumes contained, such as anise, caraway, coriander and fennel.

The price of imported flaxseed tends to increase from year to year. In 1897 the average price per bushel was $1.03; in 1901, $1.27; in 1903, $1.50; in 1909, $1.40; in 1910, $1.70; and in 1911, $2.04, for the high record importation of 8,125,000 bushels in the ten months ending with April.

Argentina is the chief source of the flaxseed imported into the United States, about 60 per cent of the imports during 1910 having been from that country, compared with about 25 per cent from Canada and about 4 per cent each from the British East Indies and Belgium. Nearly all the sugar beet seed imported is from Germany, while clover seed is imported chiefly from Germany, Canada and France.

The very large increase in importations of flaxseed during 1911 is due to the partial failure of the crop last year. The flaxseed crop of the United States is according to figures of the Bureau of Statistics of the department of agriculture, chiefly produced in Minnesota and North and South Dakota. The crop in North Dakota last year was to a large extent a failure, reducing the domestic production by nearly one-half, and the amount available for market purposes, aside from seed, fully one-half, hence the large importations in the current year from foreign countries.

The shortage in the domestic crop of flaxseed and presumably in the production of linseed oil is reflected in the large imports of oil of that character during the current fiscal year. During the nine months ending with March, 1911, the imports for consumption of linseed oil aggregated 3,207,425 gallons, valued at $2,193,679 compared with 467,664 gallons, valued at $258,390 in the entire fiscal year 1909.

By all means keep in mind the garden, and have plenty of good fresh peas and beans, corn and tomatoes, radishes and lettuce, cabbage and parsnip, turnips and beets, cucumbers and carrots. We fail to realize too often what all these mean; not only a saving in store supplies but better health and less doctor's bills. Home is the better for these things and children are happy and contented among such surroundings, and make better citizens.

Chicken wire makes a good trellis for tomatoes. A single stake will do, or a barrel hoop supported about two feet from the ground by three stakes is good.

Prune out old canes of raspberries and blackberries, and burn them. Thin the hills to three or four shoots. Cultivate, and add some manure to the soil.

Radish and spinach seed may be united and sown together in rows one foot apart on rich, thoroughly prepared soil. Mix one-third radish to two-thirds spinach.

If any fruits or vegetables are marketed, see that they are put up in clean, neat and well-graded packages. They will sell quicker and at a better price.

It often pays to grade strawberries very carefully. A customer pleased and satisfied means a steady market for produce.

Remember that too much water is as bad as too litle, because it fills up the interstices and smothers the plants.

A plot of ground 40 by 60 feet will produce sufficient vegetables to supply a family of five or six.

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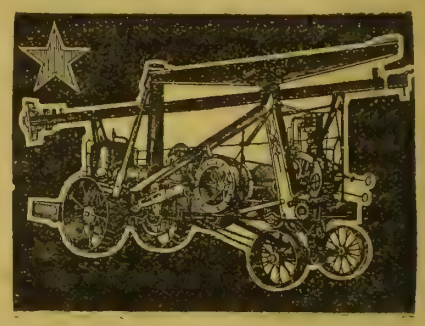

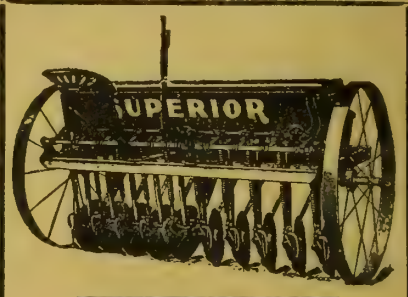

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The Ornamental Garden

THIS MONTH.

Plant poppies; plant all kinds of poppies, of course first and last all the native eschscholtzias. Plant Shirleys. This latter beautiful poppy may be planted any month in the year, but this is an especially opportune time. Plant stocks, cineraria, primulas. Of course nearly all bulbs which have not already been planted should be put into the ground at once. Some bulbs like the gladiolus may be held back for another month or two, but all the Dutch bulbs should be in the ground. Amaryllis belladonna which have been in the ground several years, should be taken up at once, the bulbs broken apart and replanted. Roses should be doing their prettiest this month and if properly pruned and encouraged with a little nitrate of soda will throw a wonderful bloom for the holiday season, assuming they are given fairly good weather conditions. This is also a good time to make cuttings of roses, though if the weather stays warm it may yet be a little early. Carnation cuttings may also be started this month. These start quicker and are more satisfactory under glass, but with care may be started in hotbed or even in the open ground. Sweet peas may be planted if proper varieties are selected. It is too late to plant winter bloomers, but the newer orchid varieties may be planted and will bloom in the spring and early summer.

Plant a new lawn around the back door; slick up the back yard and put it into condition so that you will be proud to have your neighbors come to the back door. Lawns do not start so quickly at this time of the year as in the spring, but the fall planted lawn has the advantage of getting a good start of the Bermuda, for Bermuda does little growing in the cooler season.

CARNATION CULTURE.

It is now time to figure on getting into the benches the plants intended for indoor culture all summer. The first consideration is the cleaning up of the houses and repairing any of the benches that need it, these preparations should be carried out in a thorough manner so that there is no rubbish left around to harbor thrips or red spider; it is a very difficult matter to fight these pests under the very best and cleanest conditions without having old rubbish and dirt to serve as nests for them. Our next item is the compost, the most important feature of all, they need a good live fresh soil that is capable of producing a steady plant growth but not so overcharged with manure as to cause a long-jointed soft growth. The quantity of manure to soil should be governed somewhat according to the texture of the manure, if it is very well rotted one part to four of soil is all right, but if the manure is inclined to be on the fresh and green side it should be used in proportion of one part of manure to five parts of soil.

We place a very thin layer of well-rotted manure at the bottom of the benches and fill it with soil to the depth of five inches after it has been firmed down. A sprinkling of fine bone is put in the surface of the soil and well mixed in. The soil is then evened up. We are then ready for the plants. If these have been grown on the bench, they should be thoroughly watered long enough before the time of planting to allow the water to drain through the soil, so that it will not be muddy for lifting, also, if the plants are in pots they should be watered and allowed to drain before planting. Ten inches apart each way is ample space to set the plants. Plant firmly, leaving a slight depression around each plant so that watering can be done at the plant only, without wetting the remainder of the soil.

After the planting is finished, syringe the plants two or three times a day during the hot weather and give all the ventilation possible. After a few days the weeds will commence to appear, these should be removed as soon as large enough to handle, not allowing them to remain long enough to weaken the carnation plants. A very important consideration with these indoor-grown plants during the very hot weather is that of watering at the roots. The plants need a thorough watering in at time of planting, after this water should be given only as the plants are in need of it and then thoroughly. Do not keep the soil in a saturated condition, which is a cause of soft, spindly plant growth. The work of pinching back the growths will have to be followed up closely to make the plants break evenly. Another matter is to look out for the aphis, spraying regularly twice a week to keep them in check.—Gardening.

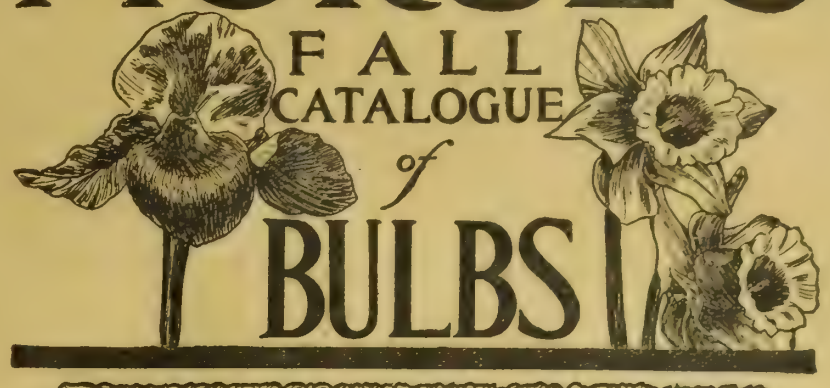
LILIUM HARRISII.

The bulbs of Lilium Harrisii for early winter blooming will soon arrive and preparations should be made to handle them as soon as they are received. They should be potted as soon as they arrive and then placed in a cold frame. They can then be brought forward as they are wanted. The bulbs can be planted either in pots or boxes and later if it is desired set out in the benches to bloom. While it takes a little longer to plant them in pots they transplant much more successfully than when disturbed in moving from the boxes. Place the bulbs for the early flowering in a four-inch pot and dig out a frame, place the pots side by side in the frame and give them a good watering, then sprinkle on the top a thin layer of sand or ashes and cover with three or four inches of soil, place shutters on the frame to keep them dark and cool until the bulbs have made roots. They can then be brought into the houses during the fall and early winter as they are wanted.

PRUNING SHRUBS.

The spring blooming shrubs are now nearly all done and the safest rule for pruning is to cut back into shape after the flowers have passed, when the shrubs begin their growth for the next season's crop of flowers. All the small weak growths should be cut out and the plants trimmed into proper shape. Unless this is attended to shrubs rapidly become a tangle of weak growths, bearing but few flowers, and grow into ungainly specimens. Too often this important work is left until too late and the blooming growth for next season is cut off with the result that there are no flowers the succeeding year. Privet hedges should be constantly pruned into shape so as to have a nice appearance and they will stand any amount of cutting as they grow very rapidly. August is the best time to trim berberis and they will need no further cutting back for the balance of the year.

MORSE'S



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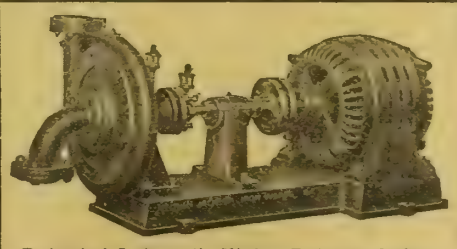

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3 LBS. OUR FAMOUS ALOHA COFFEE. This is the highest grade Mocha and Java Blend. Retails 45c lb. Ground and put up in heavy double paper bags. Special price this lot $1.00

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4 OZ. BOTTLE ROYAL PURE TRIPLE STRENGTH VANILLA EXTRACT. Our own manufacture. None better. Special price this lot only 29c

5 LB. SACK TABLE SALT. Special price this lot 5c

1 2-LB. PKG. ROYAL CORNSTARCH. Highest quality. Special price this lot.....11c

1 1-LB. CAN ROYAL BREAKFAST COCOA. Fresh and equal to any. Special price this lot.....29c

1 1-LB. CAKE ROYAL PREMIUM CHOCOLATE. A high grade bitter chocolate for cooking. Special price this lot 30c

3 BOTTLES HEINZ'S PICKLES. 1 large India Relish, 30c; 1 medium Chow-Chow, 20c; 1 medium Pickled Onions, 20c. Special price this lot only 39c

1 QUART JAR HOME MADE RASPBERRY JAM. Made of pure fruit and pure cane sugar only, in most sanitary manner. Special price this lot 40c

2 PINT BOTTLES UNFERMENTED GRAPE JUICE. Recommended by physicians for sick and well alike. Special price this lot.....25c

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5 8-OZ. BARS SPECIAL LAUNDRY SOAP. This is one of our big sellers. Special this lot.....14c

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1 ½-PINT BOTTLE MASON'S IMPORTED TABLE SAUCE. The finest sauce made for steaks, chops, fish, etc., 25c size. Special this lot 17c

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1 GALLON CAN LEMON CLING PEACHES. This is the whole peach, and with the addition of sugar makes a delicious table sauce. Special price this lot.....27c

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1 GAL. CAN PEELED PIE APPLES. Use them instead of the fresh or dried fruit. Special this lot....26c

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1 GALLON KIT GERMAN DILL PICKLES. This is the medium size Salt Pickle. Very fine. Special price this lot 59c

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MAIN 783

European Foul Brood

By J. D. Bixby, Covina, from Address Before Los Angeles County Beekeepers Association

The appearance of European or "Black" foul brood in the northwest portion of Los Angeles County has excited much interest, not unmixed with consternation, among the beekeepers of the county.

This specific form of bee disease is the most virulent known to apiarists. Its first recorded appearance in this country was in 1895, in Scoharie County, New York, whence it spread, in gradually widening circles, over a good portion of the state and into Massachusetts and Pennsylvania.

It is supposed to have been brought to New York in nuclei shipped from the South, or with queens from Ohio, or both, and was undoubtedly carried to Canada and various parts of this country in queen cages; not by the queens or their escort in themselves, but through the medium of the "candy" supplied for their food, this candy having been prepared with contaminated extracted honey.

Unquestionably it was brought to the Pacific Coast in this way, appearing first near Selma, Fresno County, two years ago, where large numbers of queens had been shipped from the East. From there it has spread rapidly through the San Joaquin Valley and across the Tehachapi into Los Angeles County.

Symptoms and Indications.

Three forms of larval bee disease are prevalent on this Coast: "pickled brood," which is usually the result of superannuated or defective queens; American foul brood, which is highly contagious but easily controlled by proper treatment, and European or black foul brood.

In pickled brood the larva becomes discolored and dies about the fifth or sixth day after hatching, few cells being sealed; turns tail outward in the cell and rapidly assumes a dark brown color; it has little odor and is not ropy; soon dries up and is removed by the bees. It is not contagious and is usually cured at once by supplanting the old queen with a young one, especially if of Italian stock.

In American foul brood, the larva seldom dies before sealing, in this respect being directly the opposite of black brood. Soon after being sealed the larva dies, becomes a brown, gluey, ropy mass, stringing out from one to two inches when tested, and of a horrible odor. The capping of the infected cells turns much darker, sinks down slightly, and occasionally has a a small hole in the center. A diseased comb can usually be detected at once by its dark color, and the foul smell observed the moment a hive is opened. It is exceedingly contagious, through honey, pollen, combs and hive.

Remedy.

The only method of cure is to shake the bees on to frames containing only starters of foundation, in a clean hive, caging the queen to prevent absconding. After three days, shake again on to healthy drawn combs or full sheets of foundation, giving, if possible, a frame of hatching brood from a strong colony; release the queen, and if honey is not coming in freely supply a comb of honey.

Great care should be taken to prevent robbing; all good honey should be extracted—cleaning the extractor thoroughly with hot water after the operation then boiling for an hour if it is ever to be placed where bees can reach it; the combs should be rendered at once into wax; the frames boiled in water, and the hive thoroughly disinfected by being scorched with fire inside. This can be done by sprinkling with gasoline, smothering the blaze by clapping the cover on when well scorched.

European foul brood varies more in its symptoms than either of the other varieties. Nine-tenths of the larvae die before sealed, usually about the fifth or sixth day after hatching. Those cells which are sealed will be very scattering, much sunken, and nearly always with a pin hole in the center. The larva usually curls back upward in the cell, head and tail down; a few may be found with the tail outward; a yellow or brown spot appears on the bowed-up back of the larva; under the glass it appears vein-like, doubtless corresponding to the circulatory system of the insect; in a few days it sinks down, becomes brownish in color and gradually dries down to a scale, being then removed by the bees. Often it sinks down to the bottom of the cell, discolors only slightly, and remains in that condition several days, looking very like a drop of tallow in the cell. The decayed larva is only slightly ropy, seldom stringing out over one-quarter of an inch; has very little odor, and this of a sour-sweet character something like fermenting green clover or fruit. Sometimes nearly all of a frame of young larvae 4 to 6 days old will be affected, being of a uniform light yellow or straw color, in contrast to the pearly white of the healthy larva. The only way to detect the presence of this disease out of the breeding season is by the thimble-like holes in the comb, extending to the mid-rib or septum, where the bees have gnawed around a cell to remove a larva not yet dried up.

The virulence of this disease can hardly be overestimated; in the little mountain valley of New York where it originated, were kept in the space of twelve miles, more than 3000 colonies of bees; four years after its appearance there remained but thirty colonies, eleven of these being Italians, all that were left of an apiary of 400 colonies. The inspector of Fresno County reports for 1910 over 30 per cent of the bees in his county diseased.

Black brood appears to be contagious not only in the ordinary modes but also through the nectar and pollen of the blossoms in the field, these being infected by working bees from diseased hives; no other theory can account for the almost simultaneous infection of hundreds of colonies in an apiary or a given bee range. It is quite possible, also, that the spores of the disease may be carried by the wind from apiary to apiary or from one range to another.

Treatment.

Fortunately, this form of disease is confined mainly to the dark-colored races of bees, the lighter Italians, our most valuable variety, being practically immune. Years of experiment have given us but this one effective remedy—Italian stock. Shaking, the McEvoy treatment, so effective with American foul brood, is useless, nine-tenths of the treated colonies being

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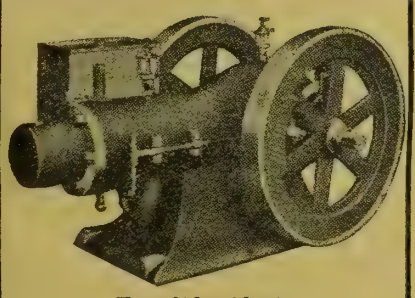

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re-infected at once, or at farthest, the next breeding season; a young black or hybrid queen will sometimes overcome a mild case of the disease, but only temporarily.

Re-queening with young Italian stock will save all colonies except those greatly reduced in numbers; these can have their queens killed and be united, to give a sufficient force to care for the young brood.

Now, mark: The essential point of this treatment is to have an interval of from ten to twenty days between the last old egg, and the first new one; this gives the bees a chance to remove the dead larvae and polish the cells for the reception of the new queen's eggs.

By this method all combs can be saved, and hives do not need to be disinfected. I would advise, however, that all combs very badly diseased and all black, imperfect ones, be melted into wax, as they retain the infection longer than comparatively new combs. In a few cases the disease may reappear, but usually only in a mild form, and a renewal of the queen generally effects a cure.

TUNGSTEN.

The mineral tungsten (the name meaning heavy stone) has been known for many years, but only comparatively recently has it become of economic importance. The most important use, according to Frank L. Hess, of the United States Geological Survey, and the one which makes tungsten mining on an extensive scale possible, is as an alloy for tool steel. Lathes using tools made from tungsten steel may be speeded up until the chips leaving the tool are so hot that they turn blue, an operation which would ruin the temper of high-carbon steel. It is stated that about five times as much can be done with lathes built for such speed and work as can be done by the same lathes with carbon-steel tools. From 16 to 20 per cent of tungsten is ordinarily used in lathe tools. The melting point of tungsten is exceedingly high—5,576 degrees F.

Tungsten also has an important use in making incandescent electric lamps, crucibles for electric furnaces, and various other articles.

A SUCCESSFUL IMPLEMENT HOUSE.

A few months ago the Cultivator gave information as to some of the successful business men of California, which we believed was received with interest by its readers. We take the liberty this week of referring to another of the most successful business men of the state. A look at his face, photograph of which appears below, will convince one that he has not long been in the business, but the success which his house has attained shows he is full of energy, hard work and capacity to select most competent helpers. The gentleman in question is Mr. Willard Arnott, head of the large jobbing house of Arnott & Co. He has been at the head of this concern for only five years, but the leaps and bounds with which the business has increased are proof of his ability. The company was established by his father, Mr. George Arnott, and Mr. Daniel B. Sumner in 1892. Within a few years Mr. Sumner died, and Mr. Arnott Junior was taken into the firm fresh from school. He took hold of the working end of the establishment and learned from bottom to top the details of the business. Upon the death of his father, five years ago, young Mr. Arnott took full charge of the business, which he has built up until today it is probably the largest of its kind in the Southwest, and is disposing every year of somewhere in excess of half a million dollars worth of general farm implements, automobiles, vehicles, engines, water lifting appliances, and practically everything in farm machinery. The concern now has thirty-five employes.

If it were asked what one factor has been greatest in the prosperity of this firm, we doubt not the answer would be, care in purchasing. Mr. Arnott has made one of his mottoes, "Arnott Quality Guaranteed," and to make that good he has exercised the greatest care in choosing his lines of goods and in insisting that everything should be of the highest quality. Once an article passes through the hands of the Arnott Co. it is known to be thoroughly reliable.

With all his capacity to handle an immense business goes a genial nature which makes Mr. Arnott a favorite with all with whom he comes in contact. We believe the firm will continue in its prosperous career and prove one of the greatest factors in the advancement of the Coast.

Willard Arnott.

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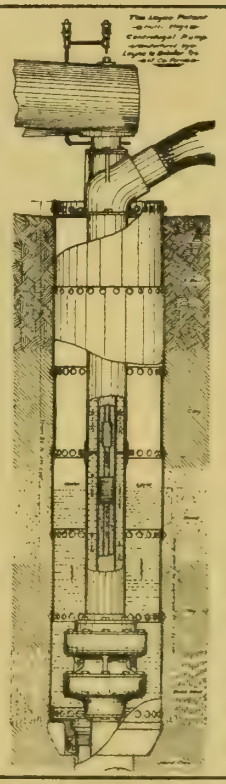

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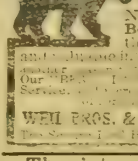

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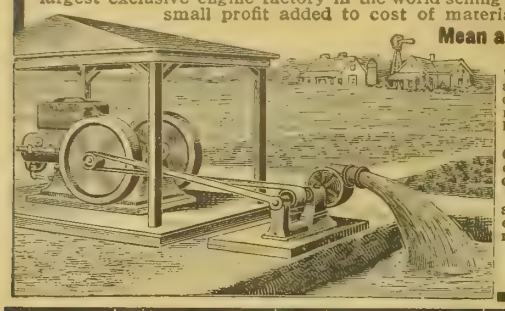

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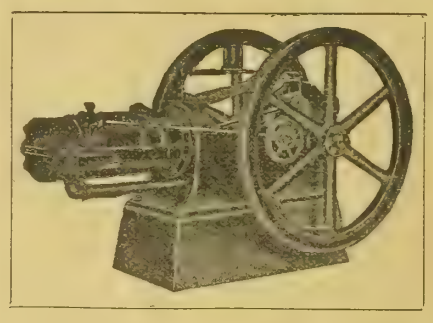

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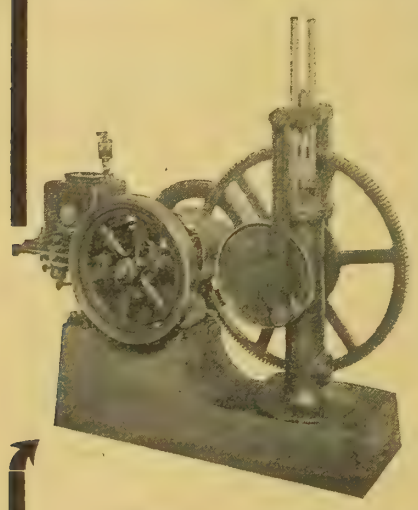

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Irrigation and Forestry

MAKING THE MAP OF CALIFORNIA

Steady progress is being made in the construction of the great topographical map of California by the United States Geological Survey and the state. This huge map will be when completed a work of which both the federal government and California may well be proud. It will be made up of a large number of sheets of uniform size, each representing a rectangular area called a quadrangle. Already 170 quadrangles have been surveyed, most of them in great detail, and an atlas sheet for each has been engraved and printed by the survey. These quadrangles include areas ranging from the vast flat reaches of the Sacramento Valley to the glacier-laden peaks of the high Sierra.

Perhaps the most comprehensive and detailed topographic mapping in the world has been that of the broad Sacramento Valley, comprising an area of more than 3,000,000 acres. This has already been completely surveyed by the topographers of the United States Geological Survey in co-operation with the state of California, the survey and the state each paying half the cost. This mapping has been done on a scale of 2 inches to 1 mile with a 5-foot contour interval, each map showing an area of 7½ minutes square. The survey covers all land possible of irrigation between Red Bluff on the north and Suisun Bay and Stockton on the south.

Surveys of the same class are now being pushed southward under a similar co-operative agreement between the state and the Geological Survey. The present field season's plans include the mapping of the area near Stockton and farther south in the San Joaquin Valley. The maps will be on the same scale and contour interval as those of the Sacramento and the topographers expect to survey this season twelve 7½ minute quadrangles and later to continue the work down to the hill country south of Bakersfield. When this work is completed it will afford for the great twin valley empire of California an exact geographic basis for engineering development of any class, irrigation, drainage, road or bridge construction; in fact, any work requiring accurate determination of levels.

The possibilities lying in the reclamation of this extensive California valley are sufficiently stupendous to awaken the interest of the most ambitious engineer. The Sacramento river drains a vast mountain region and carries water sufficient to irrigate an estimated area of 12 or 13 million acres—not only all of its own immensely fertile valley but likewise the agriculturally almost inexhaustible lands of the San Joaquin Valley. The harnessing of Sacramento River is doubtless one of the great engineering problems of the country and millions of dollars have already been spent in largely futile attempts to control this rampant monster in time of flood, but there is no lack of engineers who believe the task a feasible one and point to the ample opportunities for storing in reservoirs in the mountains the enormous excess of water, most of which under present conditions not only flows uselessly to the sea but every few years carries destruction in its wake to the extent of millions of dollars.

This year's field work of the Geological Survey will include the completion of the survey of the nine following quadrangles in various parts of California, or so much of them as the funds available and the length of the field season will permit.

Bishop Quadrangle, latitude 37° to 37°30′, longitude 118° to 118°30′. This area lies largely within the Inyo National Forest, the valley portion being subject to development from irrigation.

Long Valley Quadrangle, latitude 37°30′ to 38°, longitude 118°30′ to 119°. This quadrangle also lies partly within the Inyo National Forest and contains the source of Owens river, which furnishes the water supply of Los Angeles, through the long aqueduct now being constructed.

Priest Valley Quadrangle, latitude 36° to 36°30′, longitude 120°30′ to 121°. This area is partly within the Monterey National Forest, adjoining the Coalinga oil fields. Within the last two or three years a railroad has been built into this region from the main coast line of the Southern Pacific.

Weaverville Quadrangle, latitude 40° 30′ to 41°. Longitude 122° 30′ to 123°. This area lies within the Trinity and Shasta national forests.

These four quadrangles are to be surveyed on the field scale of 1:96,000, about 1½ miles to the inch, with a contour interval of 100 feet.

Point Reyes and Petaluma Quadrangles, latitude 38° to 38°15′, longitude 122°30′ to 123°. These areas are adjacent to San Francisco Bay. They will be surveyed on the field scale of 1:48,000, 1½ inches to the mile, with a contour interval of 25 feet.

Borax Flat Quadrangle, latitude 35° to 36°, longitude 117° to 118°. This area lies on the desert of California and is particularly interesting from the fact that it supplies a large amount of the borax used in the United States. In the center of this quadrangle is the famous Randsburg mine. This area will be surveyed on the field scale of 1:192,000, about 3 miles to the inch, with 100-foot contour interval..

Big Bar Quadrangle, latitude 40°30′ to 41°, longitude 123° to 123°30′. This quadrangle adjoins the Weaverville area and is partly within the Trinity National Forest. It will be surveyed on the scale of 1:192,000, about 3 miles to 1 inch, with a contour interval of 200 feet.

In the Salinas Valley two 7½ minute quadrangles, on the scale of 1:31,680, 2 inches to 1 mile, with a 5-foot contour interval, are to be mapped. In the publication of most of the maps the scale will be reduced.

An index map of California, showing the quadrangles of which maps have been issued, can be obtained free of cost from the director of the Geological Survey, Washington, D. C. Most of the maps are sold at 5 cents each.

HOMESTEADER'S BURDEN LESSENED.

Settlers on national forests under the act of June 11, 1906, will no longer have to pay for a survey, as they have had to in the past on unsurveyed lands, when the claim goes to patent. This relieves many settlers under the act, commonly known as the forest homestead law, from a burdensome ex-

pense. Relief from this burden has been brought about by an agreement between the Secretary of the Interior and the Secretary of Agriculture, whereby surveys made by employes of the Forest Service will be under the supervision of the Surveyor General, so that they can be accepted by the General Land Office as final.

Hitherto it has been necessary to make two surveys. Under the terms of the forest homestead law, national forest land cannot be opened to settlement unless the Secretary of Agriculture has recommended to the Secretary of the interior that it be listed for settlement; and listing is not possible unless a survey has been made. The Secretary of Agriculture has no authority to list any land unless an examination has shown that the land is more suitable for agriculture than for forest purposes. So when land is applied for, employes of the Department of Agriculture are sent to ascertain its character, and at the same time make a survey of it by metes and bounds if a survey is necessary.

This survey, however, could not be accepted by the Land Department as a basis for patent, because only surveys under the supervision of the Surveyor General can, under the law, be accepted as a basis for passing title. In consequence, under the procedure provided for when patent is sought to unsurveyed lands, the settler on land within a national forest has had to pay for a second survey. This has been felt to be especially hard because it has subjected settlers on national forests to an expense which settlers on surveyed public lands do not have to bear. Since it merely duplicated the work of the first survey, there seemed no reason why this first survey might not answer both for listing the land and for patenting it.

The survey for listing, made by forest officers, has always been without expense to the prospective homesteader. Under the new arrangement the field expenses of the survey will continue to be paid by the Department of Agriculture, so that the applicant will merely be called on to meet the cost of checking up and platting the surveys by the Surveyor General. This will remove one of the greatest objections to the working of the forest homestead law. The officials of both the Department of Agriculture and the Department of the Interior are pleased that the way has been found, through co-operation in the surveys, to simplify the procedure, cut out a duplication of work, and lessen the cost of settling upon agricultural lands within national forests.

COST OF PUMPING WATER.

The chief items of expense in pumping water are for fuel, attendance, repairs and fixed charges. The latter include interest on investment, depreciation, taxes and insurance, and vary from 12 per cent of the original cost of the plant to 20 per cent per annum, depending both on the skill of operation and the grade of machinery installed. As these fixed charges must be met whether the plant is used or not, they form a large part of the total cost of pumping in cases where the plant is operated only for a short time each year. A part of this expense is, however, properly chargeable to crop insurance. A small plant will insure against the total faliure in a dry year of valuable crops, and in some cases may save the life of trees and prevent the loss of years of toil. The saving of one crop in a dry year will pay the fixed charges of several normal years many times over.

In gasoline plants with gasoline at 7½ cents a gallon, the cost for fuel alone is about 5 cents per acre-foot raised one foot. If the water has to be raised 20 feet and two acre-feet are used for irrigation, the fuel cost for the season would be $2 per acre. Repairs and attendance are an additional charge. Such plants consume about one-eighth gallon of gasoline an hour for each indicated horsepower.

In motor driven plants, with electric current selling for two cents per kilowatt hour, the cost for power alone is about 6 cents per foot acre-foot, or 20 per cent more than for gasoline plants. The comparison is unfair, however, as the cost for attendance and repairs is considerably lower than for gasoline plants.

In steam driven plants with crude oil at 2 cents a gallon, the cost for fuel is about 3 cents per foot acre-foot. This figure cannot be fairly compared with those for gasoline or electric plants, as it is the average cost for a number of large plants costing $5000 to $50,000, and the unit cost of power in a large plant is less than in a small plant.—Irrigation.

ABATE THE NUISANCE.

State Forester G. M. Homans says that "recent investigations of cut over lands in Eldorado, Mono and Plumas Counties show that many of the slashings constitute a fire trap," and he urges the owners to clear them up before the next fire season.

When asked whether the law compelled the owners of logged off land to make a safe disposal of the debris, Homans said: "Chapter 392, Laws of 1911, provides that the State Board of Forestry may cause an inspection to be made of any forested area to determine whether or not its condition endangers life or property. Dangerous areas are declared by law to be a public nuisance, and must be abated by the owner within a designated time, otherwise the State Board of Forestry performs the necessary work, and the expense incurred becomes a lien upon the property."

"The board is ready at all times," says the Forester, "to assist in clearing up old slashings by offering suggestions, or by preparing working plans after an examination has been made on the rground."

"Owners of summer resorts," he says, "should co-operate in the construction of fire lines, and in maintaining a paid patrol during the dangerous season." Fire plans will be prepared by the Forester's office upon request."

UNITS OF MEASUREMENT OF WATER.

The quantity of water used for irrigating an ordinary farm is so large that it is convenient to have a large unit of measurement. The acre-foot is such a unit, and is the amount of water that will cover one acre to a depth of one foot. It is convenient to use, as one can see at a glance that one acre-foot of water will irrigate two acres six inches deep, three acres four inches deep, etc. In old well developed irrigated sections water is commonly sold by the acre-foot.

But water can very seldom be measured in acre-feet, and hence some unit for the rate of flow must be used. The cubic foot per second is a particularly good unit, since one cubic foot per second will deliver very closely two acre-feet a day (24 hours). It is also the unit used in all stream measurements.

For pumping, the gallon per minute is used, 450 gallons per minute being equal to one cubic foot per second.

The miner's inch is an indefinite unit, depending on the head of water above the orifice. For correct measurement the head should be taken to the center of the orifice in every case. Under six-inch pressure the miner's inch is 1-40 cubic feet per second, nearly.

Eucalyptus Planting Near Delano, Kern County —Courtesy Delano Record.

The passage by the senate of the congressional apportionment bill increasing the size of the house from 391 to 433 members will make an electoral college numbering 525 with 263 votes necessary to a choice.

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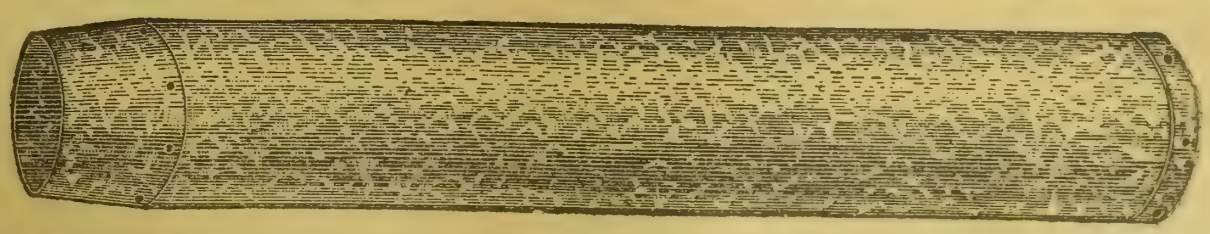

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FARMERS INSTITUTES.

J. B. Neff, Conductor of Farmers Institutes for Southern California, announces institutes at Independence, Inyo County, November 13-14; Bishop, 15-17.

COME TO CALIFORNIA.

The National Irrigation Congress, which meets in Chicago next month, will have two invitations for its next gathering from California, one from San Francisco and one from Los Angeles.

NATIONAL SHEEP SHOW.

The preliminary premium list of the National Sheep Show, which will be held in Omaha, Nebraska, December 13-16, is being mailed. Special premiums which will aggregate $2,000 in cash will be offered, and special cups and premiums in addition valued at $2,500.

ROSES EVERYWHERE.

A rose grower at Pomona has suggested that all Southern California make a rose planting campaign, planting roses on all roadsides and in every nook that may be found. This is along the line of the campaign which the Cultivator has made for preparation for our hosts of visitors who will be in California through the next few years. The amendment which we would make to the Pomona grower's suggestion is that Southern California be changed by making it all California. Let every community in the state get busy.

SWAT THE FLY.

Prof. Wm. B. Herms has made a consistent fight on the house fly, mosquito, and other pests of nearly all other sections of the state. His Bulletin No. 215 gives particulars as to prevention of the fly pest by giving no place for their breeding. Thorough surveillance on the part of all would soon make unnecessary any exhortation to swat the fly. At this season of the year there is less occasion to call attention to this pest, so far as immediate discomfort and inconvenience are concerned, but it is a good time to prepare for next year.

ADULTERATION.

It hardly seems that the statements in the circulars sent out by the Department of Agriculture can be true. In one reporting adulteration of black olives it is stated that 32 per cent of the olives were passable, 7.4 were wormy, 32 per cent worm eaten, and 28 per cent decayed. We are glad to say these were not California packed olives, but were in original unbroken packages as received from Europe, and yet Eastern consumers may yet be found who declare that California olives are not as good as the imported green olive.

PRICES OF SCHOOL BOOKS.

State Superintendent of Public Instruction Hyatt is after the book dealers who are charging excessive prices on school books. The state law is explicit in this matter. A particular case in which the superintendent used his power was brought to his attention by a complaint from Mono County. A Stockton dealer had demanded a higher price for books than fixed by law by selling to students at the regular price and adding postage. The dealer had been active in soliciting mail orders in that section. The punishment meted out to him is forfeiture of right to handle school books of the State of California. Any reader of the Cultivator who knows of cases of similar violation should get in touch with the state superintendent.

REVIEW OF CROPS

The last review of crop conditions over the country showed a much more favorable close to the season than was indicated earlier. The extended drouth of a few weeks in June and July caused great damage in all portions of the country east of the Rockies, but on October 10th the conditions the country over showed 114 per cent, taking 100 per cent as representing average condition (not normal). Cotton was 106.9; lemons 104.6; pears 103.6; grapes 103.4; sugar beets 102.4; oranges 101.6. Lima beans show percentage of full crop of 78.2; other dry beans 77.4.

VALUABLE REPORT.

The State Horticultural Society of Washington has changed the date of its next meeting from early in December to January 4-6. The secretary reports the membership greatly increased from last year. Unlike California, the Washington association is maintained by regularly elected members who pay dues. It is a state organization in name rather than through state support. There are now 750 members of the association, and it is announced that this will be raised to 2,000 if possible. Members are enrolling from other states because of the desire to secure the report, which is of value, as it gives a full transcript of the proceedings of the convention.

BOOSTING CALIFORNIA.

The Southern Pacific is making a great effort to see that California is fully represented at the Chicago Land Show, which opens on the 18th of this month. The Southern Pacific has the largest allotment of space of any exhibitor at that show, as it did last year. So far Alameda, Tulare, Los Angeles and San Diego Counties have joined with the railroad people in this effort. It is now rather late, but any community which has any feature worthy of exhibiting at that show that will attract attention to the state's possibilities of production should inform the nearest Southern Pacific agent. Free transportation will be given any exhibit.

CORN.

California is not much on the production of corn, yet it now costs practically as much as wheat where one buys in small quantities. There are certainly varieties which will be found to do well under our conditions. That they have not yet been found is indicated by the fact that during the decade 1900-1910 there was a decrease of 1995 acres devoted to corn. This amounted to 3.7 per cent, not a great decrease, but not as encouraging as a good rousing increase would have been. Some of our more careful growers are now experimenting with different varieties which will do well under California conditions. They should be aided in every way possible, and the vast amount of money paid for freight on Middle West corn should be saved to the state.

UP-TO-DATENESS.

We trust the figures given for modern home equipment in the state of Missouri would not apply to California. Better than that, we are sure they would not. A writer in the November World's Work, in reporting conditions in Missouri, says:

"For all our twentieth century up-to-dateness, there are some places where the 'modern' home is still rare. According to reports made to the Missouri State Board of Agriculture, less than 2 per cent of the farm homes are provided with water systems, less than 3 per cent have furnace or other up-to-date heating systems, and less than 4 per cent have gas or other modern lighting systems; and Missouri farms are believed to be far above the average throughout the country."

There is no reason why the modern farm home should not have practically all the conveniences of the city home, and we believe California farmers demand these conveniences and often make farm life even more attractive than city life.

DISHONEST WATER COMPANIES

A land owner who had purchased for his lands water right on the supposition that he was purchasing water recently called at this office and entered his complaint against water companies overselling their supply. In his particular case he had bought sufficient water shares, as he supposed, to abundantly cover his ten acres, but the company continued to sell its stock beyond all reason, and he found his water right one in name only, and his only hope is to join with his neighbors in a pumping scheme to secure water to keep his trees alive. We will not say this is a common case in this state, but there have been too many such instances. Dishonest promoters of water companies secure enough tangible rights to make a good showing, and then, owing to pressure from the outside or their own greed, allow this water to be so thinly distributed that all parties are injured. It is not the few dollars taken for the right which is the greatest injury; it is the years of work to bring an orchard to bearing age, only to find it absolutely worthless because there is no water to keep it going. The state should be albe to take a hand in such affairs.

REAL CAUSE OF PROSPERITY.

Some years ago Henry E. Huntington acquired large interests in Los Angeles and took charge of its street railways, establishing one of the best interurban systems in the world. It has been the custom of the papers of that city to refer to Mr. Huntington's great work, to the great debt of gratitude due him, and to give him credit for practically all the advancement of the city. More recently there has been some rebellion against this wholesale credit giving to one man. A late address called attention to the fact that there was also credit due to the city and to the people who had worked for it in creating conditions which enabled Mr. Huntington to make great wealth for himself because of this work of others. This address seemed to strike a responsive chord and there has been a casting up of benefits, and while the trial balance may never show with exactness where all credit belongs, it is generally conceded that it is not all one-sided.

The same argument also obtains as to prosperity of town and country. Chambers of commerce and other promotion organizations of some enterprising cities gather to themselves all the credit for advancement and growth, but back of it all is the productiveness of the farm. There are few successful communities in this world which were not surrounded by productive lands in charge of brainy and intelligent workers. The foundation of all wealth is the soil, and in proportion as there are brainy men handling it, prosperity will come. We feel that some of the credit for our country's advancement should be given where it is due and at other than political speeches when the horny handed son of toil is lauded—for political effect.

Agricultural News Notes of the Pacific Coast

Northern California

Meridian, Sutter County, claims a 75-pound squash.

Healdsburg wineries are paying $20 per ton for grapes.

The new creamery is in operation at Quincy, Plumas County.

Biggs, Butte County, claims ripe oranges as early as October 17th.

Prof. Loughridge addressed the farmers in institute held at Napa last week.

Sutter County's bean and prune crop were both larger than for many years.

Sonoma County Pomona Grange met in regular session at Santa Rosa last Wednesday.

The date fixed upon for the citrus fair at Oroville, Butte County, is December 4 to 9.

One prune grower at Colusa will clean up between $40,000 and $50,000 from this year's crop.

Poultry fanciers at Livermore, Alameda County, are planning for a show to begin February 8th.

Apple growers of Cohasset, Butte County, claim 16 prizes won at the Watsonville Apple Show.

Nearly 4500 acres of delta land near Lodi have been purchased and will be subdivided and colonized.

Over 5000 tons of grapes have been crushed and made into wine on the Vina Ranch in Tehama County.

Contract for plowing 2600 acres of land has been let on lands near Maxwell and Delvan in Colusa County.

The river sections are now sending in large steamer loads of potatoes, beans and onions to San Francisco.

A 1000-acre tract at Nord, Butte County, has been purchased by capitalists who will plant it entirely to hops.

Although Butte County's orange shipments have already started, heavy shipments will not be taken up until late in the month.

To raise 1829 bushels of sweet potatoes, worth $2,267.96, on an acre is the record made by a farmer in the Los Molinos irrigated district.

The Alameda County Poultry Show to be held later this month, will be judged by Harry H. Collier, Tacoma; R. J. Venn of Fresno and L. N. Cobbledick, Oakland.

Prof. Elmore Chase, horticultural inspector at Fair Oaks, Sacramento County, maintains that Johnson grass is easily controlled by persistent and intelligent effort.

Palermo, Butte County, claims the honor of the first shipment of citrus fruit for this season. The shipment amounted to 2500 boxes and was made to Australia, leaving San Francisco October 30th.

A grape grower now in the East writes to Lodi growers that he believes the loose pack of grapes to be the best and that the square tin top of the ordinary basket is "a fine medium for the growers to drive nails in their own coffins."

The Alameda Sugar Company has done extensive purchasing and bonding of lands in western Sutter and northeastern Yolo Counties, and it is rumored that a twenty-ton factory will be erected near Meridian, and that the plant will cost $2,400,000.

Central California

The Valley will produce about 45,000 tons of raisins this season.

Estimates of Tulare County orange growers indicate a big crop.

A chrysanthemum show is planned for Kerman on November 11th.

Tulare County citrus growers are already shipping their first pomelos.

The Fresno Poultry Association is discussing the matter of a winter show.

The Selma Creamery has been sold to San Francisco parties. It will be enlarged and improved.

Fruit growers near Kerman, Fresno County, are ordering bluestone for the coming season's spraying.

Dr. Wiley's answer as to what constitutes a ripe orange is in effect "they are ripe when they are ripe."

Between 2,500 and 3,000 acres of oranges will be set in the Lindsay district, Tulare County, this year.

Olive planters are looking over lands near Madera and getting information as to olive planting conditions.

A serious condition as to rabies obtains in Tulare County, and it is now feared that coyotes may be spreading the disease.

It is now suggested that the squirrel campaign may be materially aided on the forest reserves by the forest rangers joining in the poisoning campaign.

County Horticultural Commissioner Fowler of Tulare County has samples of the Utah alfalfa leaf weevil, but they were sent from Utah in a bottle.

San Jose now claims to be the chosen spot for the location of the state game farm which has been located for several years at San Leandro.

One raisin grower of Empire, Stanislaus County, made 30½ tons of raisins from five acres of Thompson Seedless vines which were less than five years old.

A petition for the formation of the Wilbur Reclamation District has been approved by the supervisors of Kings County. It calls for the reclamation of 27,000 acres.

The newly formed company which has taken over the sugar factories at Visalia and Corcoran gives assurance that the factories will be ready for next season's run.

A meeting of farmers at Patterson, Stanislaus County, was held on October 21st and the Patterson Irrigated Farms Association was formed. Its primary object will be marketing products of the members.

Prof. Crosby of the Department of Agriculture, who delivered an address before the country life commission at Davis on the matter of country education, has visited the Kearney estate near Fresno which he declared "is the finest piece of agricultural or horticultural development I have ever seen."

Governor Johnson has appointed as candidates to the coming dairy convention at Chicago: J. W. McAllister, Chino; Guy H. Miller, Modesto; A. C. Morris, Woodland; Assemblyman J. H. Guill, Chino; Henry Timm, Dixon; George A. Smith, Corcoran; Edward H. Locke, Lockford; W. B. Cartmill, Tulare; Louis N. Belknap, San Jose, and S. A. W. Carver, Los Angeles.

Southern California

Yucaipa Valley held an apple show last week.

Ontario, San Bernardino County, observed its El Festivo last week.

Extensive planting of oranges is promised for the coming season.

Escondido broke all records in shipping of Muscat grapes this season.

Sixty thousand eucalyptus trees will be planted on a tract near San Fernando.

The sugar factory at Anaheim has closed for the season. It handled 50,000 tons of beets.

Ventura County has finished sacking her beans. The crop is said to be the finest quality.

Olive growers over the southern end of the state are generally making money this season.

One Orange County horse was recently killed because of rabies which came from bite of a dog.

The walnut growers report that less than one-half of one per cent of the nuts this year are defective.

The supervisors in charge of forest reserves will make extensive plantings of eucalyptus this year.

Some Imperial Valley land under exceptional conditions has produced as high as three bales of cotton to the acre.

A rhubarb plantation at San Luis Rey, San Diego County, is now setting out 175,000 Crimson Winter plants.

At a meeting of the Escondido Poultry Association it was determined to hold the next show at Escondido, December 6 to 8.

The proposition to tax the dairymen of the San Luis Valley for dairy inspection is causing most strenuous objection on their part.

The advanced tariff proposed by the continental railroads for icing and precooling citrus shipments has been suspended by the interstate commerce commission.

Water users of the Imperial Valley are discussing the matter of bringing injunction to prevent taking waters of the Colorado by irrigators higher up on the river.

County Horticultural Commissioner Wilsie of Imperial County is making an effort to suppress shipment of alfalfa seed from Utah because of fear of alfalfa leaf weevil.

Arroyo Grande, San Luis Obispo County, is appealing for more generous planting of apples. It is claimed some exceptionally fine fruit has been grown in that section.

The Santa Ana Valley Walnut Growers Association packing house received over 69 wagonloads of nuts in one day last week. The value of one year's receipts was $20,400.

Orange county's celery crop will begin going forward this week. That one county will forward about 1400 carloads. The harvest will not be in full swing until about November 15th.

The filing of a suit against the California Fruit Growers Exchange in which it was charged that this great co-operative organization was a trust, it is thought will not lead to more than an exhibition of petty spite.

The Coast

Freewater, Oregon, is shipping three cars of apples daily.

Eugene, Oregon, opens its annual apple show this week.

Astoria, Oregon, has a cauliflower head weighing 12 pounds.

Redmond, Oregon, is preparing for its annual fall potato show.

Wenatchee, Washington, is shipping 24 cars of apples every day.

Egg consumers at Guaymas, Mexico, are paying 20 cents each for eggs.

The seventh annual agricultural fair will be held at Phoenix next week.

Live stock valuations in Montana decreased $2,000,000 during the last year.

Poultry fanciers at Albuquerque, New Mexico, closed a most successful show last week.

Potatoes are now selling at $19 per ton in some of the principal Washington potato sections.

An orchardist of Columbia County, Oregon, raised Hungarian prunes this year three inches in length.

The sugar factory at La Grande, Oregon, will run for several weeks because of the exceptionally heavy crop.

One of the sheep producing counties of Arizona shows a shrinkage from 18,000 ten years ago to 846 this year.

Outlook, Oregon, is shipping apples to Liverpool. The same section will produce this year about 500 cars of potatoes.

Washington and Oregon will both make extensive exhibits at the Northwestern States Land Show at St. Paul in January.

The commissioners of Bonner County, Idaho, have established a district for draining a great tract of about 40,000 acres.

Alfalfa seed producers at Vale, Oregon, have received 15 cents per pound and that section will market about $150,000 worth.

The Farmers Union of Irby, Washington, will buy coal and wood for its members. That one union has marketed over 100,000 bushels of wheat.

The natives near Zamboanga, on the island of Mindanao are being instructed in the growing of rice, which is now almost entirely imported for island use.

At the anti-smut convention at Pullman, Washington, it was decided that the loss from smut in the states of Washington, Oregon and Idaho aggregate $7,000,000 annually.

The south half of the large island of Mindanao in the Philippines is suitable for rubber plantations and it is reported that many companies are being formed for that purpose.

The inverted syphon under the Colorado River which will carry water from the California side to rich lands in Arizona, attracts many visitors as it nears completion. The tunnel is 14 feet in diameter in the clear.

A joint convention of the Oregon Dairy Association and the Oregon Butter and Cheese Association was held and the question of an exhibit to educate Portland consumers was discussed. A long list of prizes will be offered for the best exhibits at the show.

Live Stock and Dairy

Dairymen and stockmen are requested to write of their experience. Mrs. Sherman is always willing to answer queries and this, with experience of other workers, will make this department of greater value.

AIDS IN SELECTING BREEDING STOCK.

The establishment and maintenance of a successful breeding herd means that the manager or owner must constantly be culling his stock. At the outset he must select the entire group; and as offspring are produced, selections must annually be made from these to replace the animals culled out and turned on the general market. Without a few permanent, well-fixed and definite rules for selections, few men can make any real headway in improving and building up their herds. Some men undertake to establish and maintain herds by haphazard selection, and then wonder why they do not succeed.

When it comes to actually picking out animals, it is extremely hard to put one point over all others as being of first importance, but there is nothing of greater importance than type. One of the first requisites to successful selection is to have a definite type in mind and to stick to it. As to what that type shall be, each man must choose for himself. The popular demand to some extent, and utility in particular should indicate to him a desirable type. The matter of importance is to decide upon some definite tangible type, and have it so clearly in mind that it will always be recognized. Then select animals of that type and nothing else, thus securing uniformity in the herd and in the offspring. Probably any one may recall individuals who have concluded without much thought that they would establish a breeding herd. They went out here and there to buy and did buy many good animals. But when these animals were assembled, they were of many types and made anything but a desirable foundation. Likewise their offspring presented the same wide range of variability. The principal reason for such results usually is that the man who got the herd together had no definite idea of what he wanted except what he vaguely defined as a good animal. The consequences could be nothing else than an incompatibility of types at mating time, and therefore almost every sort of offspring imaginable. The mating of different types within a breed is sure to cause variation in the offspring. This is a point that is often overlooked. Too many men fail to realize that nearly all our breeds of live stock have large enough numbers to present several different types. The breeding of animals simply because they are registered in the same herd book is no indication of judicious breeding.

Once a type is intelligently chosen, it should be adhered to rigidly. There is nothing else where it is a better policy to adhere to your standard than in the breeding business. The history of our modern breeds is replete with the names of men who fixed in their minds an ideal and strove constantly to attain it, never turning to the right nor to the left. This seems to have been one of the largest factors for success in the work of Bakewell, that remarkable pioneer of modern breeding practices. He early conceived a definite idea of what he might do, and he worked incessantly toward his ideal type. Cruickshanks' conception of the Scotch Short-horn was idealized in his mind as a beginner in the cattle business, but it was thirty years later ere he began to realize his hopes. Had he not shown the persistence of Job and held steadfastly to his idea of type through all those thirty years the whole cattle world would have been the loser. Successful breeders of practically all times bear testimony to the fact that not only are definite ideals necessary but constant adherence to them is of equal importance.

In fixing a standard and in selecting to fit it, the demands of the time and the probable demands of the future must be given due consideration. Rare indeed is that man who can produce something new and also create a demand for it. The financial aspect of the breeding venture always must be observed, and part of the wisdom of selecting rightly is shown by him who knows when to discard sound biological principles because of their too great cost. The thing of large value to any prospective or actual breeder is a full knowledge of the history of the breed he contemplates using. Every breed has its faults as well as its good points, and a complete knowledge of these is essential to accuracy in following a standard. A thorough knowledge of the breed from its beginning up brings clearly to the mind of a careful student the points which are most valuable and also those which are most undesirable. The knowledge of blood-lines and of the methods of the great constructive improvers of the breed emphasizes their bearing upon successful production. Taken altogether a thorough study of the breed history will do much toward indicating proper ideals. Such ideals carefully chosen and then adhered to constantly will do much toward putting beginners on the way to success. —Ellis Rail in Breeders' Gazette.

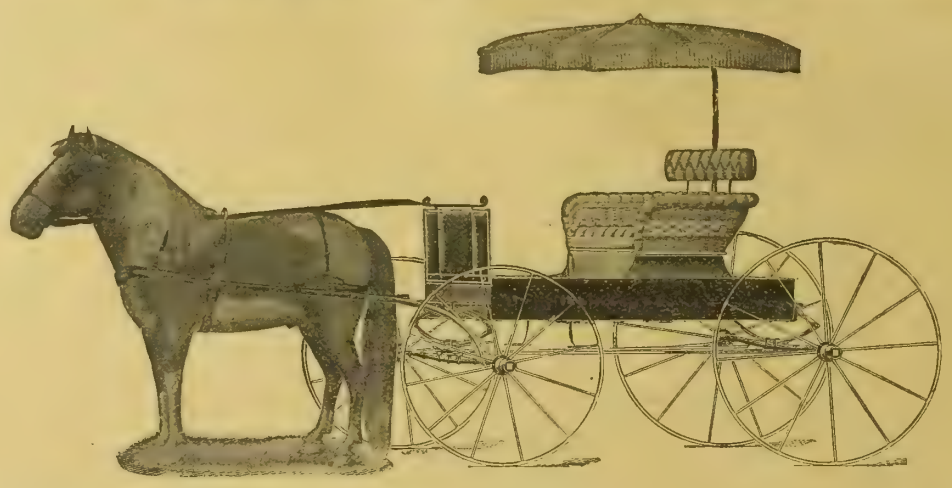
ITALIAN PROVERB.

A correspondent writes the Cultivator regarding the purchase of Eastern pure bred stock by California buyers, of some of whom it is charged by the correspondent that "Judging from the quality of stock brought back the East finds California buyers as easy to 'work' as the proverbial 'taking candy from a baby' proposition." In illustration a clipping from Wallace's Farmer of some months ago is sent, which we reprint in full:

The Italians have a proverb which, translated into English, is as follows: "Wife and stock select at home." Like many other proverbs, it presents only part of the truth, and is not of universal application. There is great good sense in the proverb applied to the choice of a wife; for if two are to make the greater part of the journey of life together, it is of the utmost importance that they should know each other before making a hard and fast engagement; and they are more likely to know each other if they have the opportunity which neighborhood association affords. In forming marriage engagements we are more likely to follow the ideal than the actual, and there is often disillusionment (very serious and sometimes humilating) when folks who marry without intimate knowledge of each other are obliged to put up with the actual and put the ideal away as a beautiful but unrealized dream.

On the other hand, no young man should feel obliged to take choice of what the neighborhood offers, unless the neighborhood is of a high charac-

PONY VEHICLES



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Alfalfa hay is a wonderful feed, but like any other dry feed it is improved if used with a succulent feed. Dairymen have long realized that they needed something to go with their alfalfa, but have not been able to get it at any reasonable cost; so the majority have continued to feed just alfalfa, with perhaps a little bran or rolled barley.

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You can balance your ration with appetizing, succulent Steam-Dried Beet Pulp—cheaper and better than any mill feed or grain, it makes an ideal combination with alfalfa hay—cows relish it keenly, and thrive on it splendidly. It can be used in the ration to replace an equal amount of mill feed or grain, or to replace *one and a half* times the amount of alfalfa hay.

It is the milk-producing qualities of Steam-Dried Beet Pulp which have made it famous. 8 lbs. daily, fed with 15 to 20 lbs. of alfalfa hay, forms a properly balanced ration for a thousand-pound-cow, giving about 30 lbs. of milk daily. You can safely figure on this ration to give you one to two quarts more milk every day from each cow—that means 3 to 6 cents every day from each cow. It's easy money, that you can get without the least trouble or risk.

It is also a splendid green feed for poultry. They are extremely fond of it.

Be Sure It's Steam-Dried

Steam-Dried Beet Pulp is the beets of the sugar factory with only the sugar extracted—and then *dried by steam.* The wet beet pulp has long been favorably known for its feeding qualities, but it is inconvenient, costly and objectionable to handle. When the beet pulp is *steam dried* it is packed in 100-lb sacks, and will keep for an indefinite time without spoiling. Steam-Dried Beet Pulp is always uniform in color and quality, never burnt or blackened by smoke, always clean and pure. Ask your dealer about it—or write us.

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Makes More Milk

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ter; that is, provided the young man has high ideals; and vice versa.

Neither must the maxim to select stock at home be taken in all literalness. The word imported has a wonderful charm for people who have not studied live stock conditions in other countries. The assumption that unless an animal is of superior quality it would not have been imported is often without foundation. On one of our visits to Scotland, we heard a description given to a certain class of horses, for which we could not understand the reason. They said: "This is an American horse." We asked, "What do you mean by an American horse?" The answer was: "We mean a horse that is good enough to ship to America, but not good enough for a dray horse in Glasgow." This was long ago; but it reminded us forcibly of a number of imported horses that we had seen, which answered quite perfectly this description. They were sent abroad because they were not good enough to be kept at home.

The United States has now reached a point when it should be able to produce as good live stock as can be produced in any other country on the face of the earth; not in every locality, but in some localities especially fitted for their production. We are under great obligations, however, to other nations for improved stock. We owe a great debt to England, to Holland and to France; but we have now reached a point where nothing should be accepted that is not of unquestionable superiority and undoubted lineage. In other words, we have reached a point when the utmost encouragement should be given to our home breeders, and the term "imported" should not be regarded, as in the past, a guarantee of superior excellence. The animal itself must prove that excellence, not by a certificate of importation, but by standing the tests which stockmen apply, or at least should apply, to all classes of animals, whether imported or of home growth.

In purchasing live stock, whether at home or abroad, we should keep in mind both environments. The animal is largely the creature of environment. There were breeds before there were breeders; and the breeders have simply perfected that which the environment first created. We must not expect to maintain the quality of stock of any kind unless we furnish them an environment, either natural or artificial, that will maintain and if possible improve the quality.

We have seen men vainly trying to make like produce like, after taking an animal from a superior environment to an inferior one; and we have never yet seen it succeed. We can safely remove stock from an inferior environment to a superior, and improve them until they measure up to the environment. Part of this environment is natural; soil, climate, superior grasses. Part of it is artificial; the care, the shelter, the indescribable something which we call skill or faculty on the part of the breeder — the judgment which enables one man to mate with surpassing skill, and the lack of judgment which frequently causes one man to fail where another in a precisely similar outward environment succeeds.

There is something in the really first-class breeder that approaches genius, something which can not be adequately described. If this genius continues from generation to generation, which it does not always nor often do, then we have a live stock farm from which a man can safely buy at apparently long prices. It is surprising, the genius of some of England's great men and great families, that have given us the best in some of our breeds of cattle. It is the lack of this genius in many cases that causes cattle to be sold more on reputation than on merit.

Therefore, give heed to the Italian proverb and follow it, but only so far as it is practicable and likely to lead to the best results. We might sum it all up by saying: Whether in wife

or live stock, select at home if you can do as well there as away from home; but in any case know what you are getting, so far as that is possible.

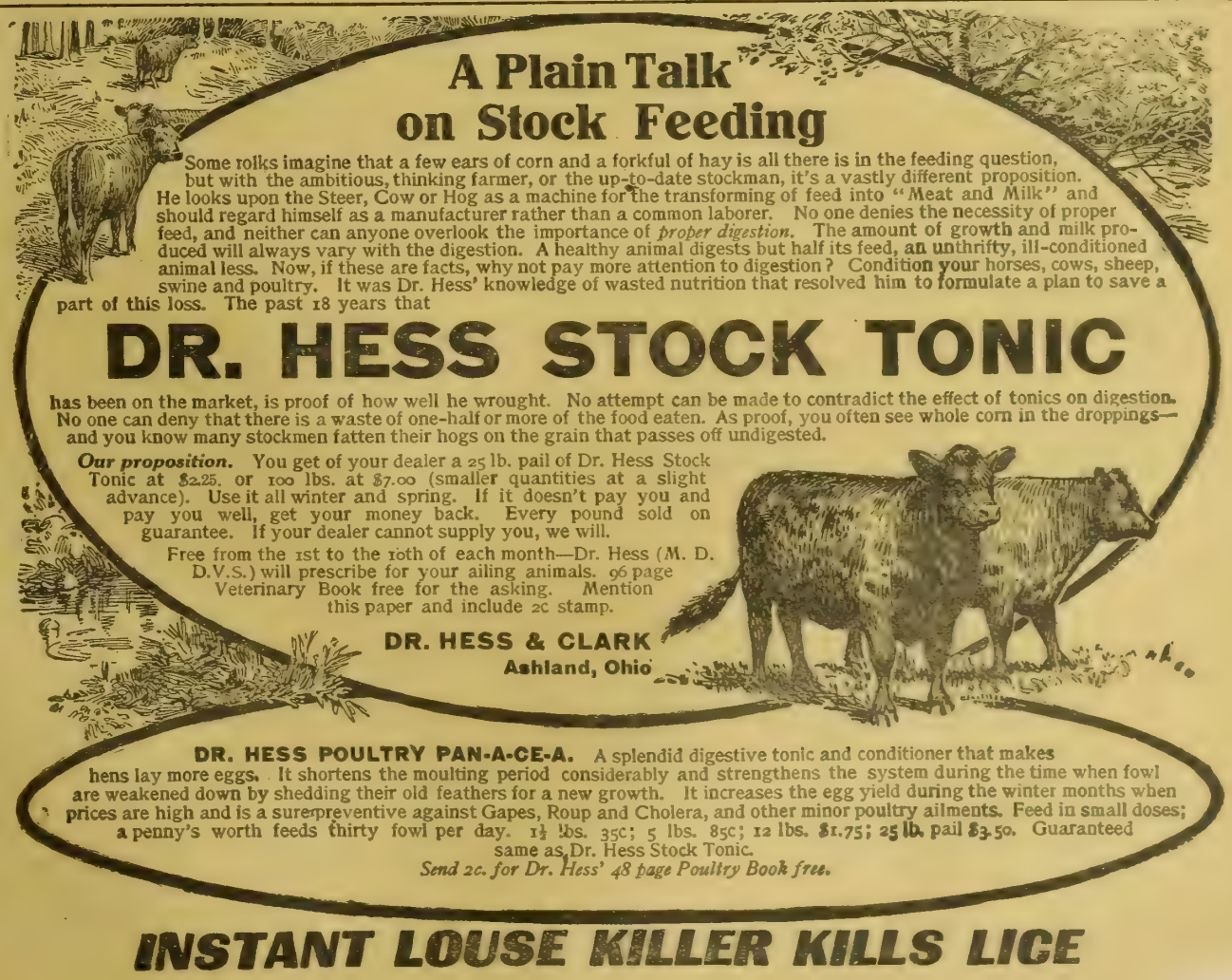
FROM MILK TO MILLIONS.

"Sudden riches, the transformation of milkmen into mining millionaires, the spectacular enrichment of individual apple growers in a few seasons," says Walter V. Woehlke, writing of the Inland Empire, Washington, in Sunset Magazine for November, "these are skyrockets that cause humanity to gaze at their blazing flights with admiration and envy. The dramatic element is strong in them, but contemplation of their fiery rise is of small profit to the toiling multitudes. The skyrocket leaves no path which the average man might travel except in an airship or by running the risk of a financial explosion at the start. But the trail of the plodder is plainly marked upon solid ground. It can be followed without leaving the earth. Take, for instance, the career of a poor Spokane milk man whose Bradstreet rating gradually, little by little, reached full seven figures. This man had no better start than a hundred others in the same business, but instead of taking up mining as a side line he devoted all his energy to the dairy. He studied every lacteal possibility of the cow, introduced modern dairy methods, made his products a little better than those of his competitors and broadened out from year to year until his wares were a familiar byword in all the Northwest. The progress of his herd from his modest start to its present position is plain even to the dullest eye, but travel along its trail is light. The glare of the ore and apple skyrocket is still dazzling the multitude. Therefore those undramatic products such as butter, milk, cream, eggs, poultry, beef and pork bring high prices in the Inland Empire. They are scarce. Trainloads of them have to be imported from other parts of the country for the consumption of the cities and of those who specialize in wheat and fruit exclusively. All the year round the demand for these prosaic staples exceeds the supply. There is money in dairying, in the chicken coop and in the piggery. For products the market is close at hand and this home market will increase rapidly.

A DANGER IN FEEDING ROOT CROPS TO BREEDING ANIMALS.

The value of root crops for feeding farm stock is generally recognized, and their more extensive use in this country for this purpose is often advocated, but investigations carried on by L. G. Michael at the Iowa station suggest that caution should be exercised in the feeding of sugar beets and mangels to breeding animals, and that there is a sound basis for the opinion long held by stockmen "that sugar beets and mangels when fed to breeding animals will in some way cause the formation of renal and urinary calculi, or kidney and bladder stones." In a series of experiments with rams extending over five years, it was found that "sugar beets and mangels favor the formation of renal and urinal calculi, or kidney and bladder stones, when fed to breeding rams," and it is thought "very probable that these roots have the same effect when fed to ewes or to cattle." In view of the fatal results often attending the formation of these stones it is deemed inadvisable to feed sugar beets and mangels to breeding animals, but there appears to be no particular danger in feeding these roots "to fattening animals, as the calculi are not likely to develop sufficiently during the fattening period to cause serious results."—Ex. Sta. Bul. 465.

It is an expensive operation to supply grain to cows with which to build up energy to fight flies.


A Plain Talk on Stock Feeding
Some folks imagine that a few ears of corn and a forkful of hay is all there is in the feeding question, but with the ambitious, thinking farmer, or the up-to-date stockman, it's a vastly different proposition. He looks upon the Steer, Cow or Hog as a machine for the transforming of feed into "Meat and Milk" and should regard himself as a manufacturer rather than a common laborer. No one denies the necessity of proper feed, and neither can anyone overlook the importance of proper digestion. The amount of growth and milk produced will always vary with the digestion. A healthy animal digests but half its feed, an unthrifty, ill-conditioned animal less. Now, if these are facts, why not pay more attention to digestion? Condition your horses, cows, sheep, swine and poultry. It was Dr. Hess' knowledge of wasted nutrition that resolved him to formulate a plan to save a part of this loss. The past 18 years that
DR. HESS STOCK TONIC
has been on the market, is proof of how well he wrought. No attempt can be made to contradict the effect of tonics on digestion. No one can deny that there is a waste of one-half or more of the food eaten. As proof, you often see whole corn in the droppings—and you know many stockmen fatten their hogs on the grain that passes off undigested.
Our proposition. You get of your dealer a 25 lb. pail of Dr. Hess Stock Tonic at $2.25, or 100 lbs. at $7.00 (smaller quantities at a slight advance). Use it all winter and spring. If it doesn't pay you and pay you well, get your money back. Every pound sold on guarantee. If your dealer cannot supply you, we will.
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Send 2c. for Dr. Hess' 48 page Poultry Book free.

INSTANT LOUSE KILLER KILLS LICE

CONCERNING THE NUBIAN AND ANGLO-NUBIAN GOAT.

In your issue of Sept. 28th I notice an article on the Nubian goat. As a matter of fact very little is known of this breed, and most of our information is legendary. It is very doubtful if ever a pure Nubian has been brought into the United States and in England there are only authentic records of two does of this breed, and they were sent by the Duke of Connaught, as a gift to Queen Victoria, from the Soudan. Both these does died without leaving progeny. The amount of milk this breed is reported to yield, eight to eleven quarts per day, is simply preposterous; this is the average daily yield of an ordinary dairy Shorthorn. A goat would have to be as large as a burro to be physically capable of producing it. It is remarkable how people will exaggerate on this point.

Mr. Crepin, who has a small herd of Nubians which were exhibited on one or two occasions in Paris, announces three litres per day, a little over five pints, as the largest yield his does recorded. The statement that the Nubian is the finest milk goat in the world would seem to be incorrect.

Among intelligent people the fact that the Swiss nation has bred for milk by careful selection for centuries would have weight, while in Nubia the animals are allowed for the most part to run wild and in the care of ignorant natives.

The Anglo-Saxon Nubian, which must not be confounded with the true Nubian, is a made-up breed, like the Orpington fowl. It originated from a cross between the native common short-haired prick-eared goat of the British Isles, and the Oriental lop-eared breed, be it Nubian, Egyptian, Abyssinian, Chitral (Jumma Pari) or other similar Indian variety. As the Anglo-Nubian has been bred for over thirty years now in England, it is considered to be a breed in itself, though even after that length of time the kids come all colors, which is an indication of mixed blood. Also individual animals vary, some having lop-ears, others again have horizontally carried ears. As milkers they are fair, about three quarts per day being the rule. Also the milk is reputed to be richer in butterfat than the Swiss breeds.

A few of these Anglo-Nubians have been imported into the United States, from England and in San Diego county, California, there is a small herd. They are quite popular in England today, as they are best adapted to the damp climate of that country and for meat and draught animals.

I give as my authority for information on both these breeds H. S. Holmes Pegler, Hon. Secretary of the British Goat Society, who probably knows more about milch goats than any man or woman living today.—Mrs. Winthrop Howland.

Veterinary

Answers in this column by Fred G. Matthews, M. S., D. V. M., 1233 Central Ave., Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Ringbone.

Kindly suggest a remedy for ringbone, and oblige—Subscriber, Earlimart.

Have your druggist prepare a blistering ointment composed of biniodide of mercury 3 drachms, euphorbium 1 drachm, cantharides 2 drachms, and petrolatum 3 ounces. Clip the hairs from the surface to be blistered, and apply the ointment with vigorous rubbing. Tie the horse so he cannot reach the part with his mouth. Allow the blister to act forty-eight hours, then remove with soap and warm water, and cover with lard or vaseline. Repeat in two weeks. The best remedies often fail to cure ringbone.—F. G. M.

Strychnine Poisoning.

Kindly advise me how to treat a dog poisoned by strychnine.—Subscriber, Grant's Pass.

(1) Begin with an emetic; two tablets of apomorphine hydrochlorate, one-eighth grain each, dissolved in a teaspoonful of water, should induce vomiting in ten or fifteen minutes. (2) When vomiting has ceased, give one teacupful of strong tea. (3) Then produce sleep by chloroform inhalations and rectal injections of chloral hydrate solution 20 grains in 2 ounces of water; or, better still, by hypodermic injections of morphine, using one (1) grain for each 16 pounds weight of the patient. Avoid, in every way possible, unnecessary handling and excitement, and if sleep has been induced by morphine, see that the dog is wrapped comfortably in a blanket during the six or eight hours the drug is acting.

Bitter Milk.

A Jersey cow, fresh last April, has on three occasions lately, for a few milkings, given milk that becomes bitter after standing a few hours. Cow has a good appetite and is fed cured alfalfa hay. The only noticeable defect in the milk is a very little clotted milk in the strainer. Today for the first time the cream will not rise—the milk simply foams.—Subscriber, Corona.

Note that the milk becomes bitter after standing a few hours. This few hours standing has given microbes time to grow. Four kinds of germs are known to cause this defect. Also a variety of weeds, turnips and mushrooms modify the flavor of milk, but the abnormal flavor is noticeable from the time the milk is first drawn. Boil the strainer cloths and all utensils; clean the udder and teats before milking, using one end of a clean towel saturated with warm water which has been boiled; then dry with the other end of the towel. Use every precaution to prevent contamination of the milk (1) from the hands of the milker, (2) from the udder, (3) from the milk vessels, (4) from the strainer cloths, and (5) from the place where the milk is kept, cellar, pantry, etc.; and if the annoyance does not disappear, write again. The fact that the milk "foams" indicates fermentation due to contamination by microbes.—F. G. M.

"Give me not scenes more charming,
give me eyes
To see the beauty that around me lies,
To see the shine of souls, see angels
shy
Among the faces of the passers by.
I do not ask for sweeter music than
The common daily Symphony of Man."

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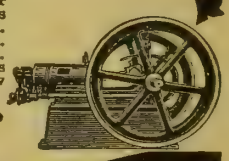

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Practical poultry people who may have ideas from their experience as to methods of feeding and housing and general care of poultry will confer a favor upon the Cultivator and its circle of readers by sending in concise accounts. Mrs. Basley is always willing to answer queries, which with the experience of others should make this a most valuable feature in poultry life on the Coast. Opinions or matters of a personal nature should be omitted, but a concise statement of facts is always valuable.

WHEN TO HATCH EGGS.

(Continued)

By Mrs. A. Basley.

Recently we considered the subject When to Hatch Eggs, and decided that eggs could be hatched in California whenever biddy wants to set, which may be any month in the year. Eggs, however, are more fertile at certain seasons than others. Spring time being nature's time for hatching, is the most certain time of having fertile eggs, and of course, when eggs are not fertile there is no use in attempting to incubate them.

Infertility of eggs at this season of the year is the reason why so few persons attempt to hatch now. The market price of eggs is so high that one does not like to lose a whole incubator or even a few settings under hens by trying to hatch them.

There are many reasons for eggs not hatching, as I have already said. Of course, the first of these is infertility of the egg. To have fertile eggs is the first consideration. Fertility can only be attained by having vigorous and healthy fowls that are fed for fertility. There is, however, a difference between fertile eggs and hatchable eggs. You may get fertile eggs but not hatchable eggs, and it is the hatchable eggs that we all want. To illustrate my meaning when I was visiting the Gardena Hatchery, a case of eggs was sent there to be hatched. The expert owner and manager refused to accept them. "These eggs are not hatchable," he said. They were narrow waisted, thin pointed eggs; they had too little protein in them. The expert knew by experience that such eggs would not hatch, and that there was no use of even trying to hatch them. The hens that laid those eggs had not been properly fed. They had not sufficient protein in their ration.

Feed your fowls for fertility; have them clean from lice, vigorous and healthy, give them plenty of grit to grind their food and make the egg shell, and then choose the eggs that are plump and well shaped, and that have good smooth shells. Examine them through your egg tester, and if you do not have one, take a roll of paper, or a roll of music. Hold the egg at one end and your eye at the other, let the sun shine on the egg and try to look through. If the egg is in a bright light, you will be surprised at what you can see. Reject all eggs for hatching that are thin-shelled, or those with thin places, or those that are freckled all over with thin spots, those that are chalky to the touch or are crooked, cracked or in any way misshapen. Set them aside to be used on the table. Do not attempt to incubate them. This may be a little more trouble at the commencement, but is a saving in labor all through the period of incubation, and a lessening in the expense of oil, besides giving more room for fertile eggs in the incubator, and more chance of a good hatch, as the infertile eggs chill their fertile neighbors and draw from their vitality. Therefore do not put eggs into the incubator or under hens without carefully selecting them.

Poultry keeping is made up of little things, and can so easily be ruined by the little things that I will add a word of warning.

Do not hold the egg when testing it so close to the lamp that it will heat it. The tiny germ of life in the egg is very tender and may easily be killed. For this reason I made a homemade tester out of a cracker box. I cut a hole the size of a half dollar just opposite the place where the flame of the lamp came when I set it inside the box. You can also use an electric light bulb in this home-made tester, in a very satisfactory way, and it is not so likely to heat the egg. I also found this box very handy for testing the eggs under setting hens. Eggs whether under hens or incubators should always be tested out. There are thousands of eggs lost or wasted every year through carelessness in this matter. An egg which is inefrtile and is for a week either in an incubator or under a hen, is perfectly good for food. It is simply an egg that has been in a warm place for a week. There is no germ in it. There never has been life in it, so there is no dead germ in it to decay. Infertile eggs keep fresh and sweet much longer than fertile eggs and those who are raising only for the market should keep no male birds in their flock and never have fertile eggs.

CALIFORNIA POULTRY SHOWS.

Modesto—Nov. 16-18, 1911. Modesto Poultry Association. Will Guyler, secretary.

Oakland.—Nov. 21-27, 1911. Alameda Country Poultry Association. Wm. T. Fros, secretary, Oakland.

San Diego.—Nov. 28-Dec. 2, 1911, San Diego Pigeon and Pet Stock Club. H. J. Gottesburn, secretary, Coronado.

Corning.—Nov. 29-Dec. 2, 1911. Corning Poultry Association, E. L. Randall, secretary, Corning.

Escondido.—Dec. 6-8, 1911. Escondido Valley Poultry Association. B. V. B. Lincoln, secretary.

Petaluma.—Dec. 6-9, 1911. Petaluma Poultry Association. H. R. Campbell, secretary.

Napa.—Jan. 4-6, 1912. Napa County Poultry Association. Wallace-Rutherford, secretary.

Santa Ana, Dec. 27-30. Orange County Poultry, Pigeon and Pet Stock Association. S. J. Jackman, President.

ORANGE COUNTY POULTRY ASSOCIATION.

The Orange County Poultry Association is out with premium list and rules covering its annual exhibition to be held in Santa Ana, December 27 to 30. The booklet has fifty-two pages and cover and gives a list of all regular and special awards and coopage of the coming show; turkeys, ducks and geese, 156; general poultry, 1,104,-bantams and pigeons, 400; total capacity, 1,660. This will make a good big show, and we doubt not the capacity will be reached, for Orange County has a remarkable number of poultry fanciers. This book has also a review of Orange County's resources and gives notes as to its desirability as a poultry producing section. It claims for Orange County a grand total of poultry and egg products for one year of nearly $1,500,000, or, to be more exact, $1,452,-522.10. We predict a successful show for the Santa Ana boys.

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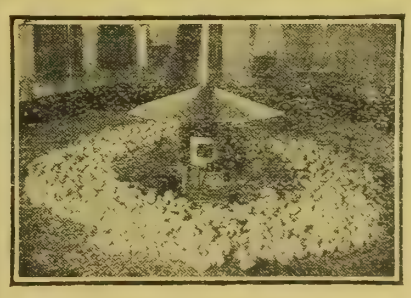

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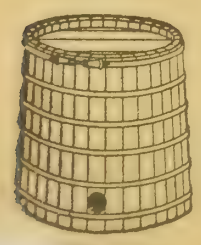

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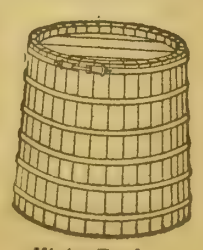

Water Tank

POULTRY AS A BUSINESS ENTERPRISE.

A Santa Clara county poultry booster recently made an address in which he said:

"We turn out for market broilers, fryers, soft roasters and old hens and roosters when their work of egg production and breeding is done. We produce eggs of different sizes and colors, most of which are marketed fresh, while others are preserved during low prices and sold when eggs are higher.

"All of these have to be marketed to the best advantage, by disposing of each at the right time and through the proper channels. To get the best possible returns for everything produced by a poultry plant requires thought, foresight and considerable hustling to make the full profits to which the producer is justly entitled.

"A full knowledge of market conditions and the production of the finished product to be marketed when prices are high is essential.

"In all kinds of successful manufacturing, the selling end of the business is carefully looked after by those trained to find the market and dispose of the goods. They have their men on the road selling, in competition with others in many places, but always on the look-out for some place where the competition is less keen and where they can sell at better prices.

"In the disposal of poultry products we can learn much from the successful drummer.

"While it is true that good poultry and eggs sell readily at a good profit, the instances where a poultryman's product is well sold with little effort on his part are comparatively rare. Take the marketing of eggs for instance. The best market in California is in San Francisco and around San Francisco Bay.

"We may justly congratulate ourselves on being located within fifty miles of the greatest consumers of eggs and poultry on the Pacific Coast. Think for a moment of the number of eggs and tons of poultry required to supply the steamships and sailing vessels passing through the Golden Gate; of the poultry products daily consumed by the immense population around San Francisco Bay and the tremendous growth which must come with the completion of the Panama-Pacific Canal and its proper celebration by the world's greatest exposition.

"There is no danger of overdoing the poultry business. The question is, can we keep up the supply?

"Can we produce the required amount of good poultry and large eggs?

THE NEGLECTED GUINEA FOWL.

The guinea is a beautiful fowl, but as it has not a beautiful voice, is semi-wild in its habits, and has shown a comparatively slight plasticity, limited chiefly to color, it has never become popular. It will probably in time become more completely domesticated, and with such domestication may show a greater tendency to vary; but its voice will probably never lose its raucous quality. It is not likely for many years to come that the guinea will become a fancier's fowl. But the guinea fowl is not without economic merits, and the better these become known the more popular will the bird become among those who keep poultry for practical purposes. It is probable that the guinea fowl will be less neglected in the near future than it has been in the recent past.

An analysis of its flesh shows that the meat is richer in muscle forming constituents, protein, than that of the common fowl, turkey, duck or goose, though with less fat or heat producing properties. And the flesh makes a fair substitute for that of game birds, is often cooked in the same manner, and is frequently served in hotels and restaurants. Among European epicures the eggs are considered a great delicacy, having a rich flavor comparable to that of the highly prized plovers' eggs. In our Southern states the cooks generally believe that they are superior to the eggs of hens for cake making and similar purposes, because the whipped white is thought to be lighter. The eggs, though abundant, are small, weighing about 17 ounces to the dozen, while the eggs of hens weigh about 24 ounces to the dozen, and as the shell of the guinea fowl's egg is relatively thicker than that of the hen, the waste is larger in about the ratio of 17 to 11—or, to be accurate, the waste in giunea fowls' eggs is about 16.9 per cent, while that in hens' eggs is about 11.2 per cent.

The market demand for guinea fowls is increasing. There is now a fair demand for the birds in Eastern cities, and this demand appears to increase from year to year. As wild game birds decrease in number, it is reasonable to believe that the demand for guinea fowls as a substitute will greatly increase, which will affect not only the number of birds needed, but the prices at which they will be sold. And as the demand for their eggs increases, as it is likely to do, these delicately flavored eggs will rise in price. So that the market outlook for the birds and their eggs is very favorable.

THE CHICKEN MITE.

There are two kinds of chicken mites, first the common chigger, scientifically known as the Trombidium holosericeum, and, second, a mite about the same size but with an ovipiriform shaped body instead of an oval one, as in the case of the first. There are also some other microscopic differences. This latter parasite is scientifically called the Dermanyssis gallinae.

There has been considerable trouble with this first named parasite during the present summer, which will extend into the fall. The hot, dry weather is most favorable for their multiplication and development. Many birds (principally hens) infested by the chigger, have been brought to this laboratory during the season. The statement from these poultry people invariably being that the birds die suddenly, and, when opened, all organs appear normal, at least so far as they could tell. Those examined in the laboratory have proved the same. Further examination reveals the fact that the cracks and crevices of the poultry houses, as well as the cracks and crevices of the roosts and the nests, were literally alive with these little pests, which are about the size of a pin head. When full of blood they appear somewhat red or bluish.

These chiggers are blood suckers. Their piercing apparatus is cone-shaped, and with this they wound the skin and suck the blood. Imagine 500 to 1000 (as we have found them) of these, and imagine the irritation, and you will readily understand why the birds die. The irritation which each produces at the point of attack is considerable.

The birds often die suddenly without many visible symptoms.

The parasite lays its eggs in the cracks, crevices, and in the filth of the hen house, where they hatch out, first into an asexual, six-legged state; later moults and develops into the eight-legged or mature state.

To rid birds and premises of these mites it is necessary to thoroughly clean the building, including nests. Repeat this every two or three days, if not every day. Spray with two per cent solution (in water) of kreso, creolin or zenoleum, forcing the solution into cracks and crevices, and repeat twice a week. Pour coal oil on the roosts twice a week. Place one inch of air-slaked lime in the nests before placing new straw. Place in dusting wallow a small quantity of tobacco dust, sulphur and pyrethrum (insect powder.) Dust hens with same if found necessary, or dip with five per cent solution creolin, kreso or zenoleum.—B. F. Kaup, Colorado Agricultural College.

TAINTED EGGS.

It is a theory long since proved by facts, that dirty or foul water will taint the eggs as quickly as anything and hence, apart from the necessity that pure water is to a fowl's health, it is also a necessity if one would ensure fresh tasting and good quality eggs, says Maritime Farmer. Fresh water must be given daily; in winter before the fowls come out in the morning, so that they will not have old or soiled water for their morning drink; and in summer when the birds are up before their human attendants, fresh water should be given the last thing at night. From now till the end of autumn all water vessels should be placed in the shade; sun-warmed water is very injurious to the birds, and anything that affects their health affects the quality, if not the quantity of their eggs. One of the greatest aids to the desirable richness of egg and yolk is to feed the laying hen on an abundance of fresh green grass, clover, or lucerne, chopped and given to the fowls in their soft food. Plenty of green food is essential to the production of rich eggs, and though fowls on a farm may have no difficulty in getting this, as they usually have the run of some field or other, chopped clover should be given them several times a week in their meal food, as there is no feed more abundant in rich egg formation, and it also contains a large supply of highly nourishing properties.

As necessary as pure water and proper food is an abundant supply of grit and shell-making material. Fowls having no teeth, the food passes at once to the crop, or first stomach, without undergoing any change. From the crop it passes to the gizzard, where digestion proper begins. The gizzard is lined with strong membranes, by which, with the aid of grit, the food is masticated. The gizzard also secretes a powerful liquid that is capable of dissolving stones and other hard substances. Without grit in the gizzard the work of digestion is thrown on the liver and stomach, thus resulting in indigestion and liver disease. As a tonic I recommend charcoal, in the shape of burnt wood cinders. The dealer and consumer have great antipathy to thin-shelled eggs, and the egg of quality has not this fault. To avoid it the hens must be supplied with oyster shell or lime. Old mortar or plaster can always be obtained, and should be placed where the birds can pick it when they please. Under proper feeding conditions, a hen's system usually contains enough lime for the shells of five or six eggs. If lime is withheld, the hen will cease laying, or if lime in limited amounts is given, the shells will be thin in proportion. Old crockery broken up into small pieces, say the size of a grain, is the best grit that one can give one's fowls and it has the added virtue of being cheap and easily procurable.

POINTS TO REMEMBER.

It is said that baking powder placed in the drinking water two or three times a week will prevent bowel trouble among chicks. Charcoal, pounded fine and kept in the drinking water, is also good.

For the production and marketing of good eggs, it is well to remember the following:

Hens should be kept that produce not only a good number of eggs, but eggs that are of a moderately large size.

They should have comfortable quarters, be fed and watered regularly, and the nests must be kept dry, clean and sweet.

Eggs must be gathered daily. Twice a day in hot weather is best.

Never allow broody hens to stay on the nests. Remove them at once, and confine where they can be broken up.

Reject as doubtful all eggs from a nest which was not visited the day before. Such eggs can be used at home where they will be broken separately.

All extremely small eggs, as well as cracked and dirty eggs should be used at home. They are perfectly wholesome if used at once, but if allowed to stand, become unfit to use, and are discriminated against on the markets.

All summer eggs should be placed in as cool a place as possible, as soon as they are gathered.

Moisture should never be allowed to come in contact with the eggs.

All male birds should be separated from the laying hens as soon as the hatching season is over, until cool weather in the fall.

Eggs should be marketed at least once a week. Oftener, if possible.

Keep the eggs as cool and dry as possible while taking them to town.

Keep the eggs away from all bad odors. The shell is porous and easily absorbs any strong taint.

Use good cases and fillers.

One of the greatest mistakes the poultry raiser can make is to so neglect the hens that they do not lay and are only an expense. Give them a variety of feed, give them clean water, make them comfortable, and they will do more than their share in making money for their owner.

If you have fowls to sell it pays to feed generously on corn for at least ten days before shipping. Often the old hens will give a surprising lot of eggs while being finished off on this corn diet, but, as they are putting on fat rapidly, the laying is of short duration.

If your poultry houses are reasonably tight, it would be a good thing to burn some sulphur to get rid of the mites and lice. The tighter the house is the more thorough will be the effect of the fumes of the sulphur.

Avoid frightening hens, especially on very warm days. Any excessive exercise is apt to cause apoplexy, or at best will prevent a normal production of eggs.

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The General Land Office hold that, in view of the conflicting opinions of the California courts on the point at issue, the Stratton entry and all others similarly situated shall be suspended until a decision is given by the State Supreme Court governing the disputed points. The final proof in the Stratton land was made Nov. 22, 1907.

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For Sale—(for 30 days only), 14 stands of bees, extractor and sun extractor; 7 head of horses, 25 head of cattle, 2 bulls and 24 head of hogs, 1 new 4-horse wagon, new cream separator, 100 chickens and 35 turkeys, 100 sacks of wheat, 100 sacks of oats, 50 sacks of barley and 75 ton of hay in barn; 1 new disc plow and harrow, and 1 good 4-gang plow. The rest of the farming tools, consisting of reaper, 2 mowers, 1 hay rake, 2 harrows, 1 broad-cast seeder; 1400-egg incubator, blacksmith outfit, 2 old wagons, 1 surrey, 1 garden seeder, 1 reaper for grain, 1 drill and all other small tools. This includes the rent paid till October 1, 1912, on the 758 acres, which amounts to $600 per year. Price $4500. F. J. Conrad, The Hustler, Escondido, Cal.

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For Sale—Barred Rock Cockerels about six months old, also day old chicks hatched to order. Enoch Crews, R. No. 1, Santa Cruz, Cal.

For Sale—Light Brahmas, fine stock. Also booking orders for eggs in season, $1.50 for 15. H. Koopman, Downey, Cal., Ranch 1000 feet southwest of S. P. depot.

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Another 1½ H.P. Fairbanks, $55; 2 H.P. Fairbanks, brand new, $69; 2½ H.P. Lambert, $75; 5 H.P. Holly; 6 H.P. Fairbanks; 22 H.P. Foos, $390; 10 H.P. steam engine, $45; 3 H.P. steam engine and boiler; 8 H.P. boiler.
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On the San Bernardino wagon road, at crossing of Covina electric line and Southern Pacific; 3 blocks east of El Monte High School. Take Covina electric cars to depot at El Monte.

TUESDAY, NOV. 7TH, AT 10 A. M.

35 First-Class Dairy Cows.

This stock consists of 35 first-class dairy cows, several fresh by day of sale; others coming in soon; large, rich milkers; Jerseys, Holsteins and Durhams; all young and in good condition. Choice dairy and family cows.

5 head of fine heifers, coming in soon.

37 Poland-China and Berkshire brood sows, all bred.

1 thoroughbred Berkshire boar.

200 fine shoats, weight from 80 to 150 lbs. each.

This is an extra choice lot of dairy cows, brood sows and hogs, and as Mr. Thompson is closing out his entire outfit and quitting the business, he has instructed us to dispose of same on above date

Positively Without Limit or Reserve.

100 sacks of alfalfa meal, balance ration cow feed; 1 brood mare in foal to jack, 1 swill wagon, horse and harness, 6 dozen chickens, 2 dozen ducks, 2 six-months-old draft colts, 1 yearling draft colt, 1 set of express harness, 1 milk wagon.

TERMS: $100 and under, cash; over $100, 6 months' time will be given with note and approved security and 6% interest. Discount for cash.

Free pork barbecue at noon. Do not miss the big sale.

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PREPARING FOR FROST.

The orange and lemon grower who has not prepared for possible frost has no time to spare to get his order in for appliances and fuel. Severe frosts have been known to come as early as the first of November, but it must be admitted these are exceptional, but in December there is surely need of protection, for at least one year out of every two or three there is bound to be more or less cold which will prove injurious to citrus fruits. The Troutman Orchard Heater people have established an agency in Los Angeles, in charge of Mr. W. H. Fowler. Mr. Fowler is now taking orders and making consignments of the Troutman heaters to several sections of the state. This heater has been recognized as most effective, and some of the larger growers have depended upon it. The best way to handle the frost question is for neighborhoods to join in the work, for then the effort is far more effective than where a single orchardist labors with the problem alone.

Agriculture

CHEAPER AUTOMOBILES.

The day when the automobile could be regarded as the vehicle of the rich and prosperous exclusively—or when, if owned by a person of moderate means, and employed otherwise than in some regular business, its possession was held to indicate spendthrift habits—is rapidly passing away. The multiplication of great establishments for the manufacture of automobiles has proceeded so rapidly, and the number of machines turned out by them annually has become so vast, that the "upper ten" in society can no longer afford a sufficient market for the product; and manufacturers are turning their eyes toward the "middle thousands." There, after all, in supplying the needs of the farmers and middle-class townsmen, they are to find, hereafter, their largest rewards.

One great multi-millionaire corporation already announces for sale a "thoroughly capable" guaranteed car, rubber-tired, and "with powerplant that will run 35,000 miles" for $350—a figure which approximates the cost of a good "horse and buggy" such as almost every farmer has looked upon as entirely within his means. It is practically certain that the rivalry between manufacturers will lead to the immediate offering of even better cars for the same money, or of similar ones for a lower price. The farmer, then, finds himself now the heir and beneficiary of one of the most beneficial and revolutionary inventions of the age. He is to be the beneficiary of all the experimentation which has been done, at the expense of the rich, in perfecting and developing the "auto." The "devil-wagon," as he has been want to call the swift machine which scared his horses and made the roads so often unsafe for him, is transformed by the progress of manufacturing ingenuity into the vehicle of a good genius, with which—if he cannot, like Puck, "put a girdle 'round the earth in forty minutes,"—he can at least hie to his market town and get home again in minutes where it before took hours. It will also enable him to do an amount of pleasure-traveling, independently of the railroads, such as was before a practical impossibility. It will also, by practical bringing the farm closer to the market—and by giving in many cases a choice of markets—tend greatly to increase the value of outlying farms.

It was entirely natural that manufacturers should first cater to the class having the most money to spend, and that they should bend their energies to the production of vehicles which would, from the pockets of that class, for the time being, extract the largest prices. But now that they turn to "the market of the millions," they will find its opportunities incomparably greater than those afforded by "the market of the select few."—C. R. Barns, Extension Division, Minnesota College of Agriculture.

The first few streams from each teat contain very little fat, but very many bacteria. They work their way up the channel of the teat from without, and find ideal conditions for their rapid multiplication. If they are milked out on the floor, the gross yield may be slightly lessened, but the purity of the milk, so far as bacteria are concerned, will be greatly improved.

LILLY'S These 3 Vegetables for 10 Cents

This is not a bargain, but an introductory offer to get you interested in Lilly's Seeds, and to prove to you their quality and reliability.

LILLY'S "DELICIOUS" LETTUCE. A variety introduced by us, very early with fine, hard, medium-sized heads, rich yellow heart, with a delicious buttery flavor.

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The above three varieties are all regular 10 cent packages. We offer the three for 10 cents to introduce. Send money order or stamps.

CATALOGUE READY FOR MAILING, FREE.

Send for a copy of Lilly's Annual Seed Book, 126 pages, fully illustrated with cultural directions.

Lilly's Seeds are the Standard of the West. They have given satisfaction to farmers for over a decade. They are particularly adapted to the climatic and soil conditions of the West Our seeds are tested by us before being offered for sale. We have an expert seed tester, a government graduate.

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Santa Monica, Los Angeles County, has one quince 21½ inches in circumference.

CONCRETE MATERIALS FOR FARM IMPROVEMENT.

The early settlers, colonists and pioneers encountered a trackless forest extending from the Atlantic to the prairies, the removal of which was necessary before they could create farming land. As the country began to be settled demand upon the forests was made for building material. A hundred years ago almost all agricultural structures, and buildings of all kinds in farming communities were constructed from lumber procured from nearby forests. Even a few years ago the farmer used nothing but lumber for farm buildings. The timber was cut from his own land and sawed at nearby mills, so that his own trees were converted into his troughs, dairy houses, walks, fences, and even his house and barn; hence the high price of lumber consequent upon the rapid decrease in the country's timber supply, was felt last by the farmer, though now the demand for a new building material is nowhere more keenly felt than on the farm.

Such a material has been found in concrete, which in some instances has proved superior to lumber, brick, or building stone, and is being used for all kinds of farm structures from silos to sidewalks, and stables to dwellings. This material too, like his lumber, can generally be largely produced from his own or nearby land, as nothing but the cement and metal bars for reinforcement need be purchased from afar, and much of the work can be done by the farmer and with ordinary farm labor under the direction of a skilled concrete worker.

Frequently concrete users have made costly mistakes by not informing themselves properly, before starting their work, concerning the correct methods of making good concrete. As a guide in the selection of the proper materials, especially the sand and gravel which form six-tenths of the solids used in concrete, the U. S. Department of Agriculture issued Farmers' Bulletin No. 461, containing suggestions which should be observed.

Concrete is manufactured stone formed by mixing cement, sand and stone or gravel (i. e. pebbles) together with water. The cement is but a small part of the mixture, and is the product of skilled workmen under the supervision of the manufacturer who must compete with all other makers of like material; but the sand and gravel constituting one-third or one-half of the final product must be selected and prepared by the farmer, and this is where most failures originate. Various amounts of each are used, according to the use to which the finished product is to be put. The mixture in which all the spaces or voids between the stones or gravel are filled with sand and all the spaces between the grains of sand are filled with cement is the ideal mixture. The ideal is seldom attained, but the bulletin gives detailed instructions and instructive illustrations, which should go far towards enabling the farmer to closely approach it.

AUTO AND THE BOY.

We note the following bunch of wisdom in an exchange:

Among the many wonderful achievements that the modern automobile is bringing to pass is the solution of the farm and the boy problem. In the mind of one motorist, at least, this invention of man will unlock the mystery as to how to keep the young men from forsaking the country home in order to live in the city.

Man is a gregarious animal. He loves to mingle with his fellow kind. He dreads isolation and solitude, consequently he hunts the place where the greatest number of people congregate in the smallest place—the city.

Here he gratifies the inborn instinct to rub up against his fellow man to his heart's content. Sometimes he smoothes off the rough edges and becomes a polished magnate, and is heralded from one end of the land to the other as a farm lad, born on the farm—country bred—one who has raised himself from obscurity to the pinnacle of fame.

Few Reach Fame.

But cold facts show that the rank and file of the country lads who migrate to the city merely fill in cogs of corporation machinery, wheels which keep grinding away with the same monotonous regularity year after year. This is what the city offers to the average youth. There is none of that free and independent spirit which distinguishes the country cousin from his city relative. He satisfies his longing to mingle—but he also learns more cussedness in six months than the pure air country boy could learn in a lifetime. While many boys leave the farm because they are gregarious animals, nine out of ten do so because they lose interest in the farm.

The lack of proper recreation has been offered as the reason he loses interest in the country. It is considered a tough proposition to toil all day in the broiling sun, and at night, after the chores are done, to lounge around until bedtime.

Auto Gives Recreation.

A local dealer in automobiles has given this subject great attention, and since his trade has largely been among country people, he believes that the motor car will be found by every parent confronted by this problem as the sure remedy. This is just the kind of recreation the country lad needs. It makes the eye sparkle and nerves tingle with joy and excitement. There is exhilaration in being behind the wheel, in operating the brake, clutch, spark and gas control.

The average country youth is quick to pick up the knack of handling a car, being familiar with machinery. It also creates an interest in good roads which is necessary for every farmer. When he returns from a spin the tired feeling is gone and he thinks life is worth while.

He gets to travel sections of his own territory which he never saw before, he can easily run into town as often as he pleases, and after the season's work is over and before winter comes he can take long tours over the entire land.

The automobile breaks the last thread that separates the farmer from the city, now that he has the telephone and free rural delivery.

A STEEL TOUGHENER.

Remarkable claims are made for the toughness added to steel through the use of small quantities of the metal vanadium, according to a report of the United States Geological Survey. It is declared that after treatment with vanadium, steel has great resistance to the strain, or as it is termed the fatigue, caused by constant bending.

Look for goodness, look for gladness,
You will meet them all the while;
If you bring a smiling visage
To the glass, you meet a smile.
—Alice Cary.

Rayo LANTERNS

"Light Work"

There is no needless delay about putting the horses up for the night and getting into your own comfortable home when the work is lighted—and lightened—by a Rayo lantern. Rayo lanterns give such a strong, steady light you can put your hand on what you want in a second.

Rayo lanterns are the best and brightest on the market.

Made in all kinds of styles and sizes, to suit any use.

Finest material and workmanship; most light for the oil consumed; will not blow out.

All Rayo lanterns are equipped with selected Rayo globes, clear, red or green, as desired. Wicks inserted in burners, ready to light.

Dealers everywhere; or write for descriptive circular direct to any agency of the

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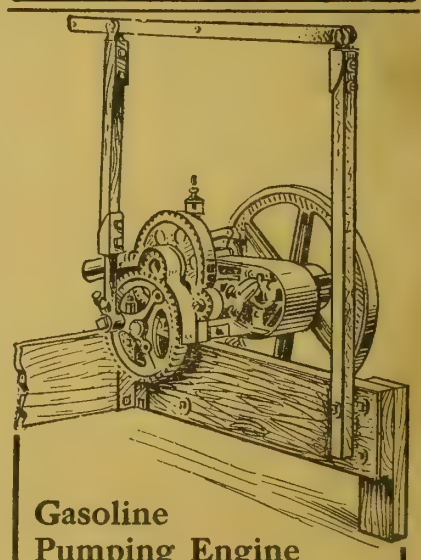

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These air-cooled Pumping Engines will pump the same quantity of water as an 8-ft. windmill. They will pump any or all the time, whether the wind blows or not. They are sold complete ready to operate, are easily set up and will give entire satisfaction for years if properly oiled. About one pint of gasoline in four hours is required.

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Questions and Answers

THE EDITOR AND STAFF

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper, and sign full name and address. Unsigned communications receive no attention.

Varieties of Peach.

Please give list of most suitable canning peaches, also list for table use.—Subscriber, Highland.

The Lemon, Phillips and Tuscan Clings are probably the principal canning peaches in this state. Also the McDevitt is said to be one of the very best of canners. Runyon's Orange Cling is another favorite with the canners. If freestones are preferred, the Elberta is one of the very best. Foster, Crawford and Lovell are all favorites. For table use Briggs Red May, Alexander and Hale's Early are popular with the early planter. The Foster, Elberta, Early Crawford, Late Crawford, Muir and Lovell, Salway & George's Late Cling are all good table varieties and ripen in about the order given from the last of May to the last of September.

Applying Lime.

Please tell me the best form of lime to put on ground of orchard or garden. What results can be expected from it? How should fresh lime be prepared? What is value of wood ashes and gypsum?—Subscriber, Glendora.

The best form of lime, at least that in which there is least danger of injury, is pulverized lime rock unburnt. If quick lime is added to the soil without thoroughly slaking there is liable to be loss from burning out of humus. If the fresh lime is the only available form then be sure it is thoroughly air-slaked by exposing sometime to the atmosphere. This is the more expensive method of applying and those near a sugar factory can secure safer and better lime in the factory waste lime.

Results to be expected are that if ground is very heavy and close it is flocculated and made looser and more workable. It also makes available the fertilizer in the organic matter in the soil and in a sense aids in more rapid lowering of the fertility content of the soil. Most California soils have abundance of lime and on the lighter and sandy soils care must be exercised in applying it. Wood ashes is one of the best fertilizers, especially where potash is needed. It may contain as much as five per cent actual potash; also small percentage of phosphoric acid and a large proportion of lime. Gypsum is of value in case black alkali exists in the soil. It will reduce the black to the white alkali which is more soluble and more easily washed away. It is also an excellent absorbent about stables and is spread over compost heaps to preserve nitrogen and prevent loss by evaporation. As a direct fertilizer it has no value, but does make available the potash in the soil.

Weevil in Bran.

Have a quantity of bran which has been kept in metal container but has a number of weevil in it. Attempted to kill them by use of carbon bisulphide, but had only a small quantity to use and find that there are still weevil living. Is it dangerous to feed this bran to cattle or horses?—J. G. S., Richgrove.

There is no danger from feeding this bran because of treatment with carbon bisulphide if it has been exposed in small dishes placed over the bran and the fumes only allowed to work their way through the mass. When exposed to the air for a few moments the fumes are entirely dispersed. As to feeding bran infested with weevil, we have never heard any objection.

Best Breed.

I will not ask you which is the best breed, because I notice you always say that there is no best breed, and that you advise inquirers to choose the breed they like the best, but I would like to ask you to tell me which breed you are keeping, or did keep when you were in the poultry business yourself, and what were your reasons for keeping that breed."—Mrs. J. F. Y., Los Angeles.

I have kept at different times twenty-two or more different breeds, but when I was in the business for money I kept the White Plymouth Rocks. I am very fond of all varieties of chickens, and each breed has its special good qualities. For that reason I always say to inquirers, "Choose the breed you like best," because they are more likely to succeed with the one that they know and like rather than one recomemnded to them by someone who may not know their tastes and inclinations. I loved them all and used to think that no layers came up to the Leghorns. I noticed that when any breed is especially recommended as an egg layer, it was said "They lay as well as the White Leghorns," showing the undisputed superiority of the Leghorns as layers. For me, they laid well. They knew me, were perfectly tame, flying on my shoulder, arms and hands, but whenever a stranger came near they would scurry to the other side of the yard in perfect terror. If even a cat walked along the fence they were wildly frightened, and whenever they were frightened it had a deleterious effect upon the egg basket. Then again, they would fly over any fence and were restless and nervous. These to me were their faults, also my family preferred brown eggs, and the Leghorns lay white eggs.

Being very partial to white fowls, I thought I would try the White Plymouth Rocks. These I found had gentle, quiet dispositions; they were fine layers of a good sized brown egg. They dressed better for the table than their darker cousins, the Barred Rocks. They were almost non-setters, but when occasionally one would set, she made as good a mother as the Barred Rocks, and a ten years trial has proven to me that they are equalled by few and excelled by none for table quality and for egg laying. They are a large fowl, so that when their days of usefulness as layers are over they bring a high price as market fowls. They have a yellow skin, which is much desired in the American market, and being one of the American breeds, are extremely hardy and readily adapt themeslves to any climate in the United States. I have successfully exported them as far as the Philippines and New Zealand, and they did equally well in those climates. Some very fine flocks of these birds are now kept in Los Angeles and Southern California. They are equally adapted for town lots or for country farms. They are good fall and winter layers. Anyone who has once kept them will be very reluctant to give them up.—Mrs. A. B.

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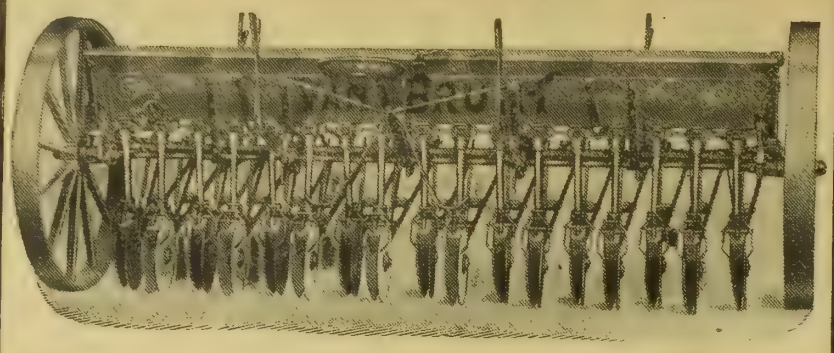

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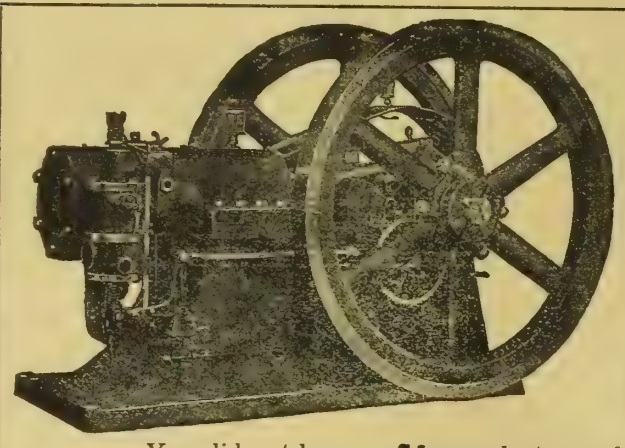

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MILK STRAIN

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Self Milker.

We have a request for information as to preventing a cow from sucking her own milk, and from an extended article on that subject by Mrs. Sherman in the issue of the Cultivator of October 28, 1909, we take the following extracts:

"This vice is said to come to cows that are staked and lack water to drink. Prevention is not easy, for any means adopted are apt to interfere with the cow's eating, sleeping and licking herself clean. One device tried was a hollow bit. This was soon discarded, as the cow could not eat well nor chew her cud and lost flesh rapidly. The next thing tried was the common bull ring in the nose, with two smaller bull rings hung on it loosely. This proved no good, as the cow managed to tangle the hay on it and it interfered with grazing. Whatever is used on the cow, we must remember she is one of the most awkward of animals, as well as most persistent, and she must be guarded from injury. A corslet of barrel staves was also tried around the neck. A short staple was driven in the upper end of each stave, the square corners rounded off, and a malleable heavy iron wire passed through the staples, the ends of the wire turned into rings, and a hame strap used to buckle the affair around her neck. This worked on all except one cow, who managed to get half over on her back and twist to reach her udder. She caught herself one day, and nearly died before released. Splitting of the tongue is efficacious, but in many cases the cow loses the ability to roll her cud."

Pruning Oranges.

Writers tell me to prune in winter for wood and in summer for fruit. Will you tell at what stage of growth the orange and lemon should be pruned? Am told that the lemon makes three growths during the year. —Subscriber, Pasadena.

This would lead to rather too extended discussion, and as we have in preparation by one of the best writers on orange culture in the state an article on pruning, we will defer answer to the above until that article appears. The present is hardly the time for pruning the orange in any case.

Grapes Splitting.

What makes Flame Tokay grapes split open?—Mrs. M. B., Lakeside.

This is perhaps due to moist weather. It is a trouble which usually follows every rain, and as weather conditions cause it, there is no remedy but different weather conditions.

Plowing Under Green Manure.

What is the best plow for turning under green manure growth? Would especially like one which will go close to the trees.—Subscriber.

Some prefer the disk plow, others the mold board plow. If a heavy chain is put over the beam of the mold board plow to the outer end of the doubletree, it will take under the heaviest growth. We must say, however, that some orchardists prefer the disk harrow. The green growth is planked down, and then, with disk harrow driven at right angles to the direction of driving when planking, the growth is cut up into small bits and mixed with the surface soil. We believe that the general feeling is favorable to a deeper covering than this gives.

Icing Cars.

Do the express companies charge a through rate for icing cars or is each re-icing charged separately? What is charged per car for pre-cooling oranges? Do the express companies pay the railway per mile for hauling their cars?—Subscriber, Colton.

Our subscriber is laboring under a misapprehension as to the express companies having to do with orange shipments. Formerly one line of refrigerator cars was called the Fruit Express, but that was not an express company in the same sense as the Wells Fargo and other express companies, which send small parcels. Under the present law the railways must own their own refrigeration cars, so that the former arrangements with the so-called Fruit Express and other privately owned car lines have been terminated. The icing charge is $75 per car to New York and $62.50, we believe, to Chicago and some other "Western points." Others carry a $60 charge, etc.

These icing charges, however, are diverse according to circumstances. There are three pre-cooling plants owned by growers; one at Pomona, one at Upland, and one at East Highland. If these houses precool their fruit and ice it, it is carried through at the rate of $7.50 which is considered freight on the ice which the private shipper has put into the car. This charge was formerly $30, but was reduced to $7.50 by the Interstate Commerce Commission. If the car is precooled by the carrier, that is, by the railroad company, and filled with ice at the starting point and not re-iced, the charge is $55. In this case the minimum weight of fruit in the car is 32,000 pounds; otherwise it might be the usual minimum of 26,600 pounds. If precooled by the carrier and not iced, then the charge is $25. If the car was pre-cooled and iced at the starting point at the charge of $55, but in transit the fruit is found to be suffering and in need of re-icing, then the $55 charge is cancelled, the car is iced and a charge of $75 made. This is assuming that it is going to Atlantic Coast points.

Black Scale on Olives.

Is there a spraying material which will rid olive trees of black scale? If not, what remedy will "completely abolish" the pest?—Subscriber, Loomis.

The best treatment is fumigation. Perhaps in your section there may be no tents for this purpose, so that unless you have a large orchard it would not pay to fit up for it. In that case spraying with kerosene emulsion, whale oil soap solution or other remedies given in the Cultivator of November 3rd, 1910, will greatly reduce the pest. To "completely abolish" is hard and expensive, even with fumigation.

Fumigating Lemons.

How often is it necessary to fumigate lemon trees which are badly infested with purple scale? What is the proper dosage? What is the latest government bulletin on fumigation?—Reader, San Diego.

The dosage table given in the Cultivator of August 19, 1909, will give purple scale treatment; also the bulletin by R. S. Woglum issued by the Bureau of Entomology as Number 90. It is impossible to give the dosage without knowledge of size of the tree, for the smaller trees take a larger proportionate dosage than the older ones. So the best answer is to give the full table which may be found on page 33 of the bulletin referred to. Later bulletins touching upon fumigation carry the same number, that is, Bulletin 90 is issued in three parts. Another work which will be of value is Circular Number 50 of the State Agricultural Experiment Station at Berkeley. It touches upon fumigation scheduling. Prof. Woodworth has also issued Bulletin 152, Fumigation Dosage. This was published several years ago and before Prof. Woglum's investigations. Once each year should keep the pest in subjection.

Household Department

WHEN THE SUN GOES DOWN.
By Will F. Griffin.

I have wondered what lies past the world's far rim,
Where the great red sun goes down;
Since the dreaming of youth, so long ago,
I have longed, so longed, sometimes to go
Over the slopes and the mountain trails,
The deserts and valleys, the woods and vales,
To the land where the sun goes down.

I have looked in the desolate, tinted West,
Where the great red sun goes down,
And wondered at strange and foreign lands,
Of unknown tongues on foreign strands,
And longed, so longed, sometimes to go,
That I might see, that I might know
Of the land where the sun goes down.

I have looked in the far away jeweled skies,
There where the sun goes down,
And longed for the deeps of a starry night,
A trackless waste and a Pole star light,
And wished that I had been born to see
Those lands and know of their mystery—
There where the sun goes down.

And I've turned, in the dusk, from the afterglow,
After the sun went down,
To the lights that gleamed in the city's heart,
The lights in hall and throbbing mart,
And longed, so longed, for the arms and breast
That cradled me sweet to sleep and rest,
After the sun went down.

—San Jose Times.

WHO WILL GO A-MAYING?

Friendship is a flower which partakes of the beauty of cultivated blossoms and of wild flowers.

It must, to approach perfection, be the outgrowth of the natural tastes. If these are chastened and rendered more highly responsive by culture, the delicate lossom of friendship will yield a rare perfume.

In May we go seeking for flowers. Put on your garden hat, the one which is browned by the suns of two or three summers, the one that seems part of you when you wear it, and come with me. There are many lovely things to be seen on the way, as we search for the flowers of friendship. And after we have found them, what are they?

Some of these plants are frail and require careful watching. The harmful enemies that may prevent the glory of full blooms are many. Jealousy, differences about money, the separations of time and place, all these things make for their destruction. If these hindrances are resolutely guarded against and the flower of friendship bursts into loveliness, shall we not cherish it?

Pleasures which come to us in no other way we may find in our friendly affections. There is often community of spirit. Nothing partakes less of the limitations of our earthly life than sympathy in high ideals.

If a friend is once enclosed within the sacred precincts of our hearts, there should not be too great a difference to us in the interests which we feel in his affairs and in our own. Are not the griefs, the illnesses, the successes of that friend very close to us? Is not his spiritual life of import to us, and his welfare in a measure our own?

If we enjoy together the great poets, those undying voices who have left proof of the winged powers of mind and spirit, then beauty has been added for both of us to that glittering, star strewn robe of wonder which each noble intellect throws over the sordid features of life.

There are many boulders of every day life to obstruct the course of the limpid stream of friendship. But they may also lend to it a charm. If our friend believes an unkind criticism of us which for a time seems to separate us from him, it may offer us an opportunity to be forgiving. And when the old cordiality returns may we not find that the ensuing depth of kindliness, the still pool of mutual confidence, is deeper and calmer than before? The glistening rapids of temper, hasty words, quickly forgiven, add movement and foam to the course of the flowing friendship.

The Maytime of youth fosters the making of new friends. The heart opens easily. A confiding spirit has not yet been replaced by too much forethought.

But this May day hurries on, and we have not yet enjoyed our bunch of flowers for which we came a-Maying. If, perchance, a later flower has found a place among those of spring, let it stay.

Here is the forget-me-not. It is the friendship of a baby. The blue, unassuming flowers hold the heart like the eyes of a very little child. Nothing is more tenacious in claiming the affections than the eyes of a baby. They speak, even though the little lips are quiet. They hold out to us the crystal drink of heaven, in earth's fragile cup.

This sweet June rose stands for college friendships, because memories of commencements are in its haunting fragrance, recalling moonlight nights of June, high resolutions and parting words after four years together. And out of the pleasant bonds of college days grows the lifelong, trusty dependence of the two older men, who meet after months or years of separation, with a deep understanding of the heart needs and the intellectual point of view, each of the other.

The tuberose is the friendship which has been, between one who still lives and one who has gone to the realms of deathless asphodel. Its odor is too heavenly sweet. Let us turn aside to this other blossom, which is of the present and full of pulsing life, and which yet partakes because of its ineffable and passionate quality of the strange and searching waftures which come to us from the fields of death. It is the flower which embodies the friendship of lovers. For lovers may also be friends. As I look closely at this blossom I cannot distinguish its form, color or fragrance. It is wonderfully beautiful. For each person it is, perhaps, different. If we look too intently, it fades from view.

The friendship of an invalid is like a violet, that lowly flower which grows close to earth. The air around it is made sweet, as are the souls of those who surround a patient, gentle invalid who, like the violet, must live bound close to earth, but with petal wings spread towards Heaven.

The light of this May day is fading, and the other flowery friendships which make up my Maytime cluster are hardly to be distinguished.

One of them, I know, is the tender love between mother and daughter. Another, the strong comradeship mingled with sentiment which draws together father and son. And there is a roseate, delicately veined bud just opening which recalls the friendships of young girls.

Do not let these flowers drop wilted from your hand! Do not let the plants of which they are the crown and glory fade away.

The stars bloom out in the soft sky. The dewy evening draws on. Let us go.

AT THE LUNCH COUNTER.

Said a bald headed man to a waitress bold:
"See here, young woman, my cocoa's cold!"
She scornfully answered: "I can't help that;
If the blamed thing's chilly, put on your hat!"

—Success Magazine.

ABOUT THE SIZE OF IT.

First Bunko Man: "Do you believe there is any truth in the old saying that a sucker is born every minute?"

Second Bnuko Man: "Well, I don't know as to that, but they are born often enough to keep us wise guys from becoming honest."

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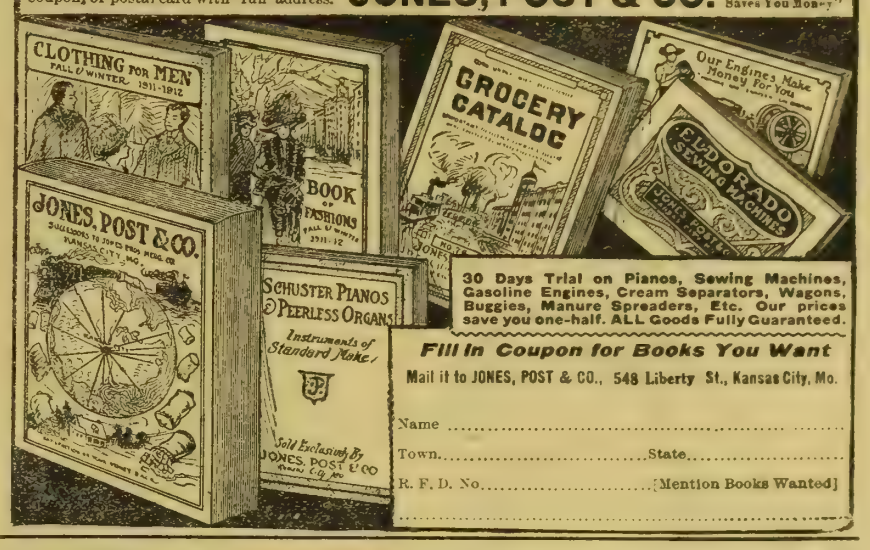
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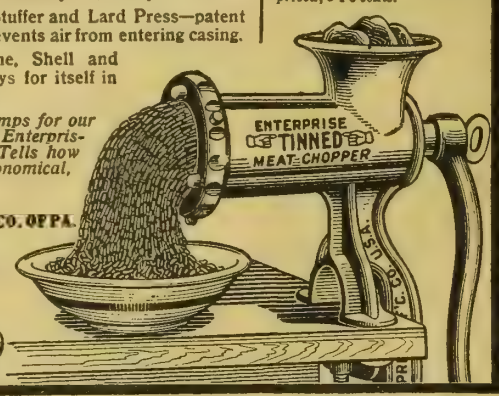

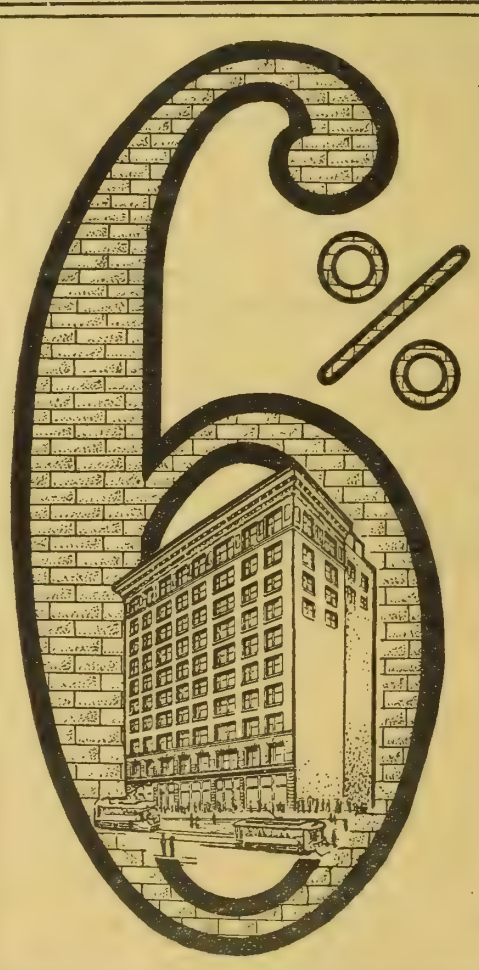

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HOW MUCH FRESH AIR?

Fresh air, and especially fresh air in the bedroom at night, has by dint of incessant warning and preaching at last become the goal of all thinking people.

Hygiene is so powerful a goddess today that even custom and fashion must bow down to her, in theory if not in practice. There is danger here, for when people begin to credit themselves with virtues they do not possess, or to mistake decent theories for proper practice, they cease to advance in wisdom or health.

Some people take to the fresh air only as a timid bather takes to the water. They have heard that it is good for them, and they think that they think it is; but in reality they detest it, and regard it as full of threat and peril.

In a cross-examination of any dozen people, as to what each regarded as a ventilated bedroom, the results would vary from a room too cold for a self-respecting St. Bernard dog to sleep in, down to one which air leaked in from an open crack in some adjacent bathroom or corridor.

Sometimes inquirers show by their questions that they really desire to do right, hygienically, if only they knew how to begin. For these there is a motto for their banner—"Be bold, be bold, and evermore be bold-"

What constitutes bad air in a bedroom? The answer to this is, any air that has been rebreathed.

To what extent should the window be kept open in cold weather for one in ordinary health? The answer to this is, to the same extent that it should be kept open in all weather, and in all states of health—wide! Furthermore, when it can possibly be managed, window should be spelled with an "s." Fortunate is the sleeper who has one on at least two sides of his room. Let such a person fear no drafts, for these are the friends of mankind. Bad air and drafts do not live together. Neither do colds and drafts, hard as many people find it to believe this.

It is not wise to feel cold, neither is it necessary. It stands to reason that with wide-open windows in winter, warmer coverings will be needed. A properly ventilated bedroom will be of the temperature of the outside air, or very nearly so, and summer blankets will not avail. It also stands to reason that if one covers the head for exposure in the daytime, one should do the same at night. A soft cap made from a Shetland veil lined with silk, and made to pull over and down to the brows, will be found a most luxurious nightcap.—Youth's Companion.

REVISING THE NATIONAL ANTHEM.

At the request of King George the venerable Dean Hole has been revising the British national anthem in order to bring it just a little more up to date and in harmony with the modern spirit. The dean has improved it materially as far as he has gone by substituting lines in the stanza reading "Confound their politics, Frustrate their knavish tricks," so that the revised version reads beautifully as follows:

O Lord our God arise,
Scatter our enemies,
  Make wars to cease.
Keep us from plague and dearth,
Turn Thou our woes to mirth,
And over all the earth
  Let there be peace.

Certainly this is unexceptionable, but we think the dean has not gone far enough, and to remedy his omissions we venture to suggest the following additional lines, which we respectfully submit to the distinguished consideration of His Majesty:

Please cork up Bernard Shaw,
Keep us from saying "Aw!"
  When we converse.
Give English clothes some shape;
Make Punch a funny pape;
Show us how to escape
  A. Austin's verse.

In any future pinch
Renew our ancient cinch
  On Yankee cash.
May Uncle Sammy's girls
With their stocks, bonds, and pearls,
Still help our dukes and earls
  To cut a dash.

Other stanzas ad lib. suggest themselves, covering the present plight of the House of Lords, the dangers of Canadian reciprocity with the United States, and other prayerful considerations affecting the current needs of the empire, but we prefer to hold them over for our special seventy-two page issue devoted to the question of the annexation of the British Empire to the American Republic.—Harper's Weekly.

WINDOW CLEANING HINTS.

It is possible to reduce window cleaning to a science so it takes little time and less drudgery. It pays to learn how to clean glass most expeditiously.

Choose a time when the hot sun is not shining directly on the glass for window washing, or the panes will be streaked. A cloudy day is excellent, or the part of the day when the sun is off that side of the house.

Wipe off all the dust first with a dry cloth. Have all your polishing rags and ingredients at hand. These consist of tissue paper—old patterns do nicely—a newspaper, a piece of chamois.

Do not fill a bucket with soapy water and go to work as if out for a Monday wash. Do not use soap at all. A tablespoonful of ammonia or two tablespoonfuls of kerosene to four quarts of hot water will do the work much more quickly and give a better polish.

Rub one pane at a time, first inside, then out. Wash with a rag not so wet as to slop on the floor, then wipe off with tissue paper or newspaper and give a polish with the chamois skin.

There are special pastes sold for window polishing which are excellent. Professional polishers use a mixture of whitening and household ammonia reduced to a thick paste. This is kept on the glass for about ten minutes, while the other windows are being smeared with it, then is rubbed off with newspaper and is polished highly with chamois.—Aunt May.

HOMELY HINTS.

Towels and other household articles of the same sort often show thin places, which are precursors of holes, and which should be mended before they get worse. Darning a Turkish towel by hand is a tedious affair, but they can be darned on the sewing machine easily.

Remove the presser foot and darn the thin places by moving the towel backward and forward, then turning it around and darning it across.

This is a plan which will work well with any of the household fabrics, and if done in time will save a large hole from forming.

If the leftover breakfast cereal is carefully moulded into a bowl or

square pan that is first wet with cold water, it may be sliced and fried as an acceptable luncheon dish.

Wash white silk gloves at night in warm suds, rinse well and dry. Drying them in daylight causes them to turn yellow.

Ground rice is excellent for cleaning white cloth. It should be applied with a piece of clean white flannel, left for two or three hours, and then well brushed and shaken.

The taste of made-over dishes may be improved by a few drops of onion juice, but not enough to give it a strong flavor.

As the warm weather approaches, less meat should be eaten, and eggs or some other light food substituted.

WATERMELON RIND AND CITRON PRESERVES.

Remove the green outer rind of the melon, and cut the remainder into strips or pieces of small size. Cover with cold water, adding 1 tablespoonful salt for each quart water, and let stand over night. In the morning drain and rinse thoroughly; then cook in clear water until transparent. Drain again. Make a syrup of three-quarters pound sugar and one-half cupful water for each pound of rind. Skim, add one sliced lemon, a bit of ginger root and the rind. Cook about twenty minutes, or until the melon looks clear; then skim from the syrup into jars. Boil the syrup until thick and pour over fruit in jars.

WASHING FLUID.

For a good washing fluid take one pound of borax, one pound of potash lye, one pound of washing soda and one pint of ammonia. Mix the first three ingredients in an enameled pan (not tin) with five quarts of boiling water. When cold, add the ammonia and pour into an earthen jug. About half a cupful of this fluid is enough in the water of an entire wash.

CLEANING LIGHT CLOTH.

Light cloth coats can be cleaned at home with oatmeal and whiting. Lay the garment flat on a clean table, mix the oatmeal and whiting in equal proportions and with a piece of clean flannel rub thoroughly and evenly into the cloth. Shake well, and if necessary go over again and repeat until the cloth looks perfectly clean. Then shake well and press on the wrong side with a warm iron.

THE REAL VERSION.

Napoleon sat inadvertently upon a smoking cannon and scorched the seat of his white trousers.

"I cannot turn back now," he muttered to an aide as he hastily dismounted. "I have burned my breeches behind me!"

This historic expression has been grossly corrupted by later writers.—Pathfinder.

"I called a prize fighter a liar today."

"Gee whiz! What did he do?"

"I don't know; I hung up the receiver."—Toledo Blade.

How wonderful the power of love,
For the world all loves a lover,
But greater is the power of shove,
For the world all shoves a shover.
—Puck.

"You find yourself refreshed by the presence of cheerful people. Why not make earnest effort to confer that pleasure upon others."

What does your anxiety do? It does not empty tomorrow, brother, of its sorrow; but oh! it empties today of its strength.—Ian Maclaren.

THE BEST OFFER WE HAVE EVER MADE

We have furnished in the last few weeks over 1200 of these

LATEST CENSUS CHARTS

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To the Man Who Owns a Horse, a Cow, a Sheep, or Hog;

To the Woman who Owns Poultry:

Willsden's Anatomical Chart will be found more valuable than any single book or publication that can be secured anywhere, at any price.

It includes five distinct plates in colors of the horse, first showing exterior parts; second, the bones; third, the veins or circulatory system; fourth, the muscles, and fifth, the internal organs. Each part, bone, vein, muscle and organ is plainly designated by name.

There are also five similar plates each for the COW, SHEEP, HOG, and CHICKEN, all carefully drawn and engraved, and in correct coloring. In connection with these plates are carefully written articles by eminent stockmen and veterinarians, describing the chart in detail. For instance, the write-up on cattle gives an explanation of each of the five plates, then gives some valuable suggestions regarding general care and management, shelter, and feed, as well as describing their common ailments with symptoms and treatment. While this chart may not displace the veterinary surgeon, a thorough understanding of the information it contains will save thousands of dollars' worth of livestock and poultry each year which have been lost heretofore BECAUSE THE OWNER DID NOT KNOW AND HAD NO WAY OF FINDING OUT JUST WHAT TO DO AT THE RIGHT TIME.

The HON. F. D. COBURN, who is considered authority, in his book "Swine in America," gives several secret remedies. The LIVESTOCK ANATOMICAL CHART GIVES THESE SAME REMEDIES, AND THAT ON HOG CHOLERA CURE IS ALONE WORTH HUNDREDS OF DOLLARS TO ANYONE WHO RAISES HOGS.

The publisher of the SHEPHERD JOURNAL gives in this chart many valuable treatments of diseases of the sheep.

DR. J. W. THOMPSON, editor of THE SPIRIT OF THE WEST, gives a world of information on care and treatment of diseases of the horse.

REESE V. HICKS, editor of POULTRY CULTURE, takes up the subject of poultry, and also gives the best known method of preserving eggs; it is simple—yet has been recommended by the Governments of the United States, Great Britain and Germany.

This Chart Also Contains

Latest map of California and Nevada.
Map of the United States.
Map of the World.
Complete list of California cities and towns with 1910 census.
Portraits of all California governors, from first to last.
Pictures, maps and data concerning Panama Canal.
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During all my studies and experience I have never come across a chart so complete in every detail as the Willsden' Livestock Anatomical Chart. Every farmer and live-stock raiser should have one.

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Signed.....

Route..... Postoffice.....

San Francisco-Los Angeles Produce Markets

Los Angeles Market

LOS ANGELES, Nov. 1, 1911.

Butter.

Receipts of butter are very light, and the market is firm. An advance of a cent and a half is noted.

Prices to trade 2½c in advance of the following Produce Exchange quotations:

Extras	34½
Firsts	30
Ladles	25
Country	23

Cheese.

Local Anchor	16
Oregon Daisy	17@17½
Northern Fresh	16@17
Domestic Swiss	18
Imported Swiss	33

Eggs and Poultry.

Only 50 to 60 cases of eggs are received daily, and every offering is cleaned up at once. Prices are steady at last week's quotations. Large consignments of Eastern poultry are received, but local stock is so scarce that the demand for Eastern stock has increased considerably, causing the market to remain firm.

Buying prices f. o. b. Los Angeles are:

Local Ranch Candled	49
Case Count	45
Eastern	32@34
Eastern storage	25@26
Pullets	26

Dealers pay for live poultry f. o. b.:

Hens, lb	13@17
Roosters	8
Broilers	20
Fryers	12
Roasters	12
Turkeys	20@23
Ducks	13
Geese	12
Guinea hens, doz	4.00
Squabs, doz	1.75

Live Stock.

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs	7¼
Prime steers	6
Heifers	6
Calves, lb	6½
Sheep, ewes, head	4.75
Lambs, head	3.75@4.25
Wethers	5.00@5.60

Potatoes.

Wholesale prices are:

Sweets, yellow, cental	1.50@1.75
Highlands, cental	1.75@1.80
Salinas	2.00@2.10

Onions.

Wholesale quotations:

Australian Brown, cental	1.40@1.50
Silverskins, sack	1.75@1.85
Yellow Danvers, cental	1.40@1.50
White Wax	1.50@1.65
Garlic	5@6

Vegetables.

Wholesale quotations:

Artichokes, Northern, doz	90@1.10
Beets, doz bunches	35
Bell Peppers, lb	4@5
Brussels Sprouts, lb	8
Beans, Limas	4@5
Beans, Green and Wax	4@5
Green Chilis	3@5
Chilis, Red	15@16
Cucumbers, lugs	50@60
Cabbage, sack	65@75
Cabbage, Red, lb	3@3½
Cauliflower, doz	70@85
Celery, new, crate	1.50@1.75
Carrots, sack	90@1.00
Corn, lug	50@60
Egg Plant	3@5
Horseradish, lb	13½
Onions, Green, doz bunches	15@20
Kohl-rabi, doz bunches	40
Leeks, doz	35@40
Lettuce, crate	90@1.10
Mushrooms, lb	50@1.00
Oyster Plant, lb	15@20
Okra	6@8
Peas, lb	5@7
Parsnips, doz bunches	45
Parsley, doz bunches	25@30
Turnips, sack	90@1.00
Radishes, doz bunches	15@20
Rhubarb, Crimson Winter	90@1.00
Spinach, doz	15@20
Squash, Summer	50@60
Spearmint, doz	25@30
Tomatoes, lug	40@50
Turnips, sack	1.00@1.25
Watercress, doz	35@40

Citrus Fruits.

Valencias	4.00@4.50
Grapefruit	2.75@4.50
Lemons	4.00@4.50
Limes, hundred	1.25

Fresh Fruits.

Wholesale prices on the market are:

Alligator Pears	1.25@1.50
Apples, Bellefleurs	90@1.15
Apples, Spitzenbergs	1.10@1.50
Apples, Pearmains	1.25
Apples, Jonathans	1.90@2.35
Apples, Crab, lug	1.25
Bananas	4½
Casabas, crate	1.40@1.50
Cantaloupes, small	75@1.00
Cantaloupes, large	2.00@2.50
Figs, box	75@1.25
Grapes, Thompson Seedless, lb	3
Grapes, Black Hamburg, lug	65
Grapes, Muscats	75@90
Grapes, Tokays	85@1.00
Grapes, Cornichon	1.10
Loganberries	6@8
Peaches, lug	1.25@1.50
Pineapples	8@10
Quinces, lug	80@1.00
Persimmons	1.00@1.25
Pomegranates, lug	75@1.25
Plums, Clymans, lug	1.50
Plums, Tragedy	1.50
Pears, Bartlett, box	2.75
Blackberries	8@9
Raspberries	10@12
Strawberries	5@10
Watermelons, lb	¾@1

Dried Fruits.

Wholesale prices to retailers are:

Evaporated Apples, fancy, lb	11@11½
Apricots	16@17
Figs, box	1.50@1.75
Peaches	11@12½
Nectarines	12
Pears	12@13
Prunes	8½@15
Plums	10

Beans, Dried.

Wholesale quotations:

Limas	5.50@5.75
Black Eyes	4.50@5.00
Pinks	4.00@4.10
Lady Washington	4.50@4.75
Small White	4.50@4.75
Garvanzas	4.50
Bayous	4.50@5.00
Lentils	6.00@7.00
Mexican Reds	4.75@5.00

Nuts.

Wholesale quotations:

No. 1 Soft Shell Walnuts	14
No. 1 Hard Shell Walnuts	13½
No. 2 Walnuts	11
Almonds, IXL, lb	19@20
Pecans, polished	15@17
Pecans, Eastern	8
Peanuts, California	6
Pine Nuts	18

Honey.

Wholesale quotations:

Extracted Water White	8½
Extracted Light Amber	7½
Comb Water White	16@17
Light Amber	13@14
Beeswax	30

Hay.

Buying prices f. o. b. cars Los Angeles:

Barley Hay	13.00@14.00
Wheat Hay	13.00@14.00
Tame Oats	15.00@17.00
Alfalfa	13.50@14.50

Grain.

Wholesale selling price f. o. b. Los Angeles:

Wheat, new, cental	1.75@1.80
Corn	1.70@1.95
Kaffir Corn	1.80
Millet	3.75
Popcorn	4.75@5.00
Egyptian Corn	1.75
Red Oats	1.95
Seed Barley	1.50
Milo	1.95

Do your cows milk hard? Send 50 cents for teat expander. O. J. Weber Co., 225-227-229-231 East Sixth St., Los Angeles, Cal.

Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 225-227-229-231 East Sixth Street, Los Angeles.

Feed Stuff.

Wholesale selling price f. o. b. Los Angeles:

Alfalfa Meal	1.15
Beef Scrap	3.00
Bone Meal	2.05
Charcoal	2.00
Cracked Corn	2.00
Cracked Wheat	1.90
Shorts	1.95
Bran	1.70
Oil Cake Meal	2.60
Feed Meal	2.05
Rolled Barley	2.00
Middlings	1.85

San Francisco Market

SAN FRANCISCO, Oct. 31, 1911.

Butter.

Extras advanced during the last days of the week, and still hold the advance, with a very firm market.

Prices to trade 2½c in advance of the following Produce Exchange quotations:

California Extras, lb	34
Prime Firsts	31
Firsts	30
Seconds	24

Cheese.

California Flats	12½@15½
Cal. Young America, fy, new	15@15½
Oregon, fancy	13½

Eggs and Poultry.

Extras are still on the upward trend, a two cent advance being made last week, then a drop on Friday, which was recovered Monday. They now stand two cents above last week's quotations.

Official quotations of the San Francisco Wholesale Dairy and Produce Exchange are:

Fresh Ranch Extras	52
Firsts	45
Seconds	28
Eastern Seconds	17
Select Pullets	42
Storage	27
Hens	3.50@9.00
Fryers, doz	5.00@6.00
Ducks	4.00@7.00
Broilers	3.00@4.50
Roosters, doz	4.00@9.00
Geese	2.00@2.50
Goslings, pair	2.00@2.25
Pigeons	1.50@2.00
Turkeys	23@25
Squabs	2.00@3.00

Live Stock.

San Francisco prices, gross weight:

Steers	4@6
Cows and Heifers	3@4¾
Calves, lb	5@6¾
Hogs	6½@7
Wethers, No. 1	3¾@4
Lambs	4½@5
Ewes, No. 1	3¼@3½

Potatoes.

Wholesale market quotations:

River Whites, cental	90@1.10
Alamedas	1.00@1.50
Sweets, cental	1.60@1.75

Onions.

Yellow, new	75@1.00
Garlic, new, lb	3@4

Vegetables.

Wholesale quotations:

Asparagus, box	1.00@1.75
Beans, String	3@5
Beans, Wax	2½@4
Limas	2½@4
Bell Peppers, box	75@1.00
Cabbage, cental	75@85
Cauliflower, doz	50@60
Carrots	50@80
Cucumbers, box	65@90
Corn, sack	50@1.25
Chili Peppers, box	40@1.00
Celery, crate	1.50@2.50
Egg Plant, box	35@60
Lettuce, crate	75@2.00
Okra, box	50@85
Peas, sack	1.75@2.00
Hubbard Squash, sack	50@75
Summer Squash, lug	75@1.00
Squash, Marrowfat	50@65
Tomatoes, box	15@40
Turnips	60@75

Cream Separators, all sizes and prices. O. J. Weber Co., 225-227-229-231 East Sixth Street, Los Angeles.

Citrus Fruits.

Valencias	3.25@4.50
Grapefruit	3.00@4.50
Lemons	2.00@5.50
Limes, Mexican	4.50@5.00

Fresh Fruits.

Apples, Bellefleurs	75@1.00
Apples, Newtons	1.00@1.25
Apples, Spitzenberg	1.10@1.35
Cantaloupes, standard	40@1.40
Nutmegs, large, crate	35@1.00
Figs, box	75@1.00
Grapes, Thomp. S., crate	1.75@2.00
Grapes, Black	50@60
Grapes, Muscat, lug	80@1.25
Grapes, Tokay	50@60
Pears, Bartlett, box	75@2.00
Peaches, box	40@1.25
Plums, box	40@60
Prunes, box	75@85
Quinces, box	50@75
Blackberries, chest	5.00@6.00
Loganberries, chest	4.00@6.00
Raspberries, chest	5.00@7.00
Strawberries	2.25@5.00
Pineapples, Hawaiian	2.00@3.50
Bananas	1.00@1.50
Watermelons, doz	1.25@2.00

Dried Fruits.

FRUITS—1911 crop, f. o. b., carload lots, per lb: Apples, 8@9½c; Apricots, 14@17c; Peaches, 9¼@11c; Prunes, bulk basis, 6@7½c; per lb, 4¾@10c; Figs, 4¼@5½c for White; Pears, 9½@12½c.

RAISINS—1911 crop: Seeded, per pkg—Fancy, No. 16, 6½c; Choice, No. 16, 6¼c. Loose Muscatels, in 50 lb boxes—Standard, 4-crown, 5¾c; 3-crown, 5¼c; 2-crown, 4¾c; Seedless Muscatels, 5½c; Sultanas, 6@6¼c; Thompsons, 7@7½c.

Nuts.

Walnuts, No. 1 Soft Shell	14
Walnuts, No. 1 Hard Shell	13½
Almonds, '10, N P U	16@16½
Almonds, '10, Nonp	18@18¾
Almonds, '10, IXL	16½@17¼
Pecans	14@17
Chestnuts, California	6@8
Peanuts	5@5½

Beans, Dried.

Limas	5.20@5.30
Pink	2.35@3.60
Black Eyes	3.60@3.75
Small White	3.90@4.00
Large White	3.85@3.95
Kidneys	4.50@4.60
Garbanzos	3.00@3.25
Bayou	3.65@3.75
Red Mexican	4.50@4.60
Horse Beans	2.75@3.00
Cranberry	3.30@3.75

Hops.

Hops, Coast, 1910	32@36
Hops, 1911	38@41
Hops, Oregon, 1911	38@41

Honey.

Water White, Comb, '11	15
Dark Comb	12½
Extracted White, '11	9@10
Extracted Dark	6½
Beeswax, lb	24@30

Hay.

We quote the wholesale prices in round lots on today's market as follows, viz.:

Receipts of hay for the past six days have been 2,650 tons. This is about the same amount that our market has received each week for the last two weeks. The arrivals have consisted principally of alfalfa and the poorer varieties coming by water, as there has been very little shipped in by railroad from the warehouses in good hay districts.

The general condition of the market is just about the same as for the last few weeks, as there has been no change practically one way or the other. Demand has not improved, as most consumers are using hay purchased from fields. It is expected, though, that we will see a brisker market very shortly. Prices have remained steady and unchanged, and the feeling throughout is shown to be quite firm for the future.

The most interesting feature of the week has been the sale to Southern California people of several large lots of hay for shipment to Southern California. This hay was intended for our local markets, and the fact that it has

been bought to ship out of our territory adds another element of strength to the situation and disposes of certain quantities of warehouse holdings. Recently there has been some shipped out of this port for export trade.

The San Francisco Hay Association is about to compile records of hay in warehouses tributary to the San Francisco market.

The alfalfa market has continued along this week without any changes of interest.

We quote the wholesale prices in round lots on today's market as follows, viz.:

Fancy Wheat Hay	19.00@20.00
No. 1 Wheat or Wh & Oat	16.00@17.50
No. 2 Wheat or Wh & Oat	13.00@14.00
Choice Tame	16.00@17.00
Other Tame Oat	10.00@14.00
Wild Oats	10.00@13.00
Stock Hay	5.50@6.00
Alfalfa	9.00@11.00
Straw, bale	60@70

Grain.

Wheat	1.47½@1.50
Barley, fancy	1.90@1.92½
Barley, good to choice	1.85@1.87½
Barley, poor to fair	1.75@1.80
Corn	1.60@1.62
Oats, White	1.82½@1.87½
Rye	1.47½@1.52½
Mustard, Brown	5½
Alfalfa Seed	18
Millet	3@3½
Flaxseed	5@5½
Broom Corn Seed, ton	30.00

Feed Stuff.

Alfalfa Meal	15.00@17.00
Bran, ton	28.00@29.00
Feed Cornmeal, ton	38.00@39.00
Cracked Corn	38.00@39.00
Rolled Barley, ton	37.50@38.50
Rolled Oats, ton	36.00@37.00
Middlings	32.00@34.00
Oilcake Meal	42.00@43.50
Cocoanut Cake, ton	24.00@25.00
Mixed Feed, ton	25.00@27.00
Shorts	29.00@30.00

Deciduous Fruit Market

F. B. McKevitt, general manager of the California Fruit Distributors, reports:

The following gives the number of cars of deciduous fruit shipped from all points in California for the week (7 days) ending Friday morning, October 27th.

Pears—7¾ cars; movement of this fruit is nearly concluded, but there will be a few cars yet to go. So few, however, that they will cut little or no figure in the season's total.

Grapes—562¾ cars; Tokays are now nearing their finish. Should it not rain there will be considerable shipments of them to go forward during the next week, after which time there will be very few left. Cornichons are making their appearance in increasing quantities, and the shipment of Emperors is well under way. These two varieties will constitute the bulk of the movement during the remainder of the season, which will probably last for another 30 days, if weather permits.

Although the weather has been somewhat threatening since our last letter no general rains have fallen, and prospects are the good weather will continue for some time.

Comparative Statement of Shipments. October 21st, 1911.

	1910	1911
Cherries	250½	216¼
Apricots	289¾	214½
Peaches	2517¾	2027
Plums	1552½	1366
Pears	2356	2294¾
Grapes	4210½	4782½
Sundry	16	14¼
Total	11,193	10,915¼

Citrus Fruit Market

LOS ANGELES, Nov. 1, 1911.

The citrus year closed last night. All Valencias were not shipped out, though there probably remain not over a dozen cars, and they are all in Orange County. Prices remain very satisfactory, though the market is not as firm as a few weeks earlier. The number of Porto Ricans, Jamaicas and Floridas (10,000 boxes of these were disposed of in New York Saturday) which have come in have filled the market with the cheaper grades of fruit, so that only the very best of Valencias have commanded top prices. On the whole the year has been the most successful of the citrus industry. The immense quantity of nearly 40,000 carloads of fruit has been handled so that there has been practically no loss, and much of the time the best of prices have been obtained.

Lemons have eased off somewhat and are now being placed in the New York and other Atlantic Coast markets at prices lower than imported lemons could have been secured for had Californias been out of the market. It is probable that prices will shade slightly from now on until Christmas time. By that time regular winter prices may be considered established, and they will probably remain stationary until the warmer weather of spring.

Shipments.

We go to press one day too early to give the complete shipments for the year. That one day will probably aggregate not far from a dozen or fifteen cars, all from Southern California points. Complete returns from Tulare County show 2,193 cars of oranges, 105 cars of lemons; Butte County, 489 cars of oranges; Southern California, up to October 30, 36,816 cars of oranges, 6,751 cars of lemons, a total of all citrus fruits for the year from Southern California of 43,576 cars, or a grand total for all citrus fruits from the state, with one day yet to hear from, of 46,363 cars.

NEW YORK, Oct. 31.—Seven cars Valencias, one car lemons sold. Oranges firm, lemons unchanged. Weather partly cloudy.

VALENCIAS.	Avge.
Old Mission, fy, Chapman	$6.85
Old Mission, ch, Chapman	5.85
Golden Eagle, sd, Chapman	4.95
Lady Rowena, Chapman	4.00
Windemere, ch, Randolph Ft Co.	4.35
Economy, ch, Randolph Ft Co	3.65
Old Mission, ch, Chapman	6.75
Old Mission, ch, Chapman	5.80
Golden Eagle, sd, Chapman	4.65
Lady Rowena, Chapman	3.65
I X L, fy, Benchley Ft Co	5.95
Premium, or, Benchley Ft Co	5.00
Superior, ch, Benchley Ft Co	4.30
Rooster, S S Ex	4.45
Pointer, A C G Ex	4.85
Red C, Covina Ex	4.90
Cougar, Covina Ex	3.75
LEMONS.	Avge.
Pet	$5.60
Greyhound	4.95

BOSTON, Oct. 31.—Four cars sold. Market easier on oranges and lemons. Weather cool and cloudy.

VALENCIAS.	Avge.
Planet, S S, McPherson	$4.00
Pointer, A C G Ex, Azusa	3.60
Evolution, A C G Ex, Glendora	4.35
Stag, A C G Ex, Azusa	4.60
Glendora Heights, xc, A C G Ex	5.25
LEMONS.	Avge.
Rey, S T Ex, Fernando	$6.10
Tunnel, S T Ex, Fernando	5.85

NEW YORK, Oct. 30.—Seven cars Valencias, two cars lemons sold. Market higher on small sized Valencias, unchanged on large sizes. Unchanged on lemons. Fair.

Valencias.

	Avge.
Sceptre, S. S. Ex	$4.95
Rooster, S. S. Ex	4.50
Carmencita, S. T. Ex	4.95
Paul Neyron, S. A. Ex	4.55
Red Globe, Riv. Ex. Riverside	4.35
Cal. Orange, Riv. Ex. Riverside	3.40
Premium, Benchley Ft. Co	5.15
Superior, Benchley Ft. Co	4.55
Old Mission, fy. Chapman	6.75
Old Mission, ch, Chapman	5.65
Golden Eagle, sd, Chapman	5.05
Lady Rowena, Chapman	3.95
Windermere, Windermere Ranch	4.45
Economy, Windermere Ranch	3.75
Lemons.	
Selected	$5.05
Loma	4.30
Las Fuentes	5.40
Montecito Valley	4.40
Economy	4.15

CLEVELAND, Oct. 30.—One car Valencias sold. Market unchanged. Cold, cloudy.

Valencias.

Geo. Washington, S. S. Ex. Tustin	$4.80
M. Washington, S. S. Ex. Tustin	4.55

ST. LOUIS, Oct. 30.—Cold, raining. Market strong on large sizes. One car sold.

Valencias.

	Avge.
Transcontinental, S. S. El Modena	$4.80
Goldfinch, S. S. El Modena	4.50
El Modena, S. S. El Modena	4.25
Plain Ends, S. S. El Modena	4.10

PHILADELPHIA, Oct. 30.—Four cars Valencias, one car lemons sold.

Valencias.

	Avge.
Planet, S. S. McPherson	$4.25
S. S. Brand, S. S., McPherson	3.40
Hunter, A. C. G., Lateen Spur	3.40
Colombo, S. T., Placentia	4.50
Old Oak, Tustin P. Co	3.95
Searchlight, S. S., McPherson	3.75
Pointer, A. C. G., Lateen Spur	3.95
Carmencita, S. T., Placentia	5.45
Tustin Gem, Tustin P. Co	4.70
Lemons.	
Loma, W. C., Limoneira	$5.20

BOSTON, Oct. 30.—Six cars sold. Clear, cool. Market easier on lemons. Dull, declining on oranges.

Valencias.

	Avge.
Sceptre, S. S., McPherson	$4.40
Searchlight, S. S., McPherson	3.70
Peasant, A. B., Riverside	4.10
Blue Globe, A. H., Riverside	4.95
Robusta, A. H., Pachappa	4.70
Orchard, or. National O. Co	5.00
Planet, S. S., McPherson	4.05
Kenilworth, A. H., Riverside	4.80
Peasant, D, A. H., Riverside	3.85
Cal. Orange, A. H., Riverside	3.30
Hobo, A. H., Pachappa	3.65
Standard, sd, National O. Co	4.15
Lemons.	
Rey, S. T., Fernando	$6.30
Whittier, S. T., Whittier	6.00
Tunnel, S. T., Fernando	5.85

PITTSBURG, Oct. 30.—Four cars sold. Market steady on oranges and lemons. Cool.

Valencias.

	Avge.
Naralimo, Sparr Ft. Co	$4.55
Fuschia, S. A. Ex	3.25
Hunter, A. C. G., Lateen Spur	3.40
Circus, Sparr Ft. Co	3.35
Pointer, A. C. G., Lateen Spur	3.95
Lemons.	
Commercial, A. H., Arlington	$4.45

"Buy the Best Milk Producer in the world, sugar beet pulp at 50 cents per ton, of Los Alamitos Sugar factory."

HOW FARMERS BECOME PROSPEROUS.

Our American farming population is prosperous.

If you doubt this statement, take a run throughout one of our great Agricultural States, and note the fine farmsteads, well kept lawns, freshly painted buildings, chugging automobiles and general air of —"what-do-we-care-we've-got-the-dough-right-in-our-pockets"—that seems to prevail everywhere, and you will be obliged to admit that at least the symptoms of prosperity are pretty generally present.

The fact is, that farmers are prosperous—especially cattle feeding farmers.

Dr. Hess Stock Tonic has worked a revolution in that line of farm industry. It has eliminated the element of chance, and placed the feeding business on a solid basis that insure success.

This statement may seem an exaggeration, or beyond reason to the reader, unacquainted with the article in question. Nonetheless, it is true, and backed by the experience of thousands, who, by its use, have changed a disheartening struggle for livelihood into a joyous jaunt down "easy street."

Do you want to know what Dr. Hess Stock Tonic is and how it helps a cattle feeder?

First, then, we'll say what Dr. Hess Stock Tonic is not. It is not a ration, like cornmeal or bran; neither is it fed as a ration, or intended to take the place of a ration.

Everyone experienced with cattle knows that at times they show very little appetite. This is usually the after effect of a continued term of heavy feeding, and is, of course, a setback to the feeder, because it extends the cash outlay for grain. Besides, it may mean the loss of the very best market. Now Dr. Hess Stock Tonic **prevents this loss of appetite**, and consequent pecuniary loss, by keeping the animal's digestive organs in a vigorous and active condition, regardless of the amount of feed consumed. As a doctor of medicine would say, it gives "tone" to the digestive organs—makes them stronger and better able to bear the continued strain which the feeder is putting on them.

Certainly Dr. Hess Stock Tonic is a great help in making beef or milk. Probably, if the question were asked, nine out of ten successful feeders or dairymen would attribute their plethoric bank accounts to the use of Dr. Hess Stock Tonic. Dealers are reporting a great demand for this tonic, the more so, as it is well known to be a guaranteed preparation.

HOW GEORGE SOLD THE FARM.

"We were all sitting around the stove down in Bill Luken's general store the other night," said Sam Miller, "and we were talking about how much work we were going to do when it had stopped raining. It had been raining off and on every day for a week, and it did come down like pitch-forks most of the time.

"All at once we noticed that George Hicks was standing by the counter with a most solemn look on his face. None of us had heard him come in, and we were all surprised to see him and not hear him, because he always lets you know he is a-coming. He hadn't been around for a week, either.

"Fred Pettingill, who was telling about his new carriage, stopped talking and exclaimed, 'Hello, George! What makes you look so solemn? Somebody sick?'

"George sat down. 'Boys!' he began slowly, 'you know my son Jim went to town when he was young, and now he is treasurer of a big company up there. He wants me to sell the farm and come live near him. He bought a nice little place for me, out in the suburbs, and says I can raise enough on it to supply us with food, and have things pretty easy.

" 'Mother and I was both pretty well took with the idea, and decided to sell the old place. I advertised in the city papers, just about the time it started to rain, and in the last two weeks over twenty people have been to see the farm.

" 'The roofs on our place are all shingle and tin, and they most all leak. I was going to put new ones on this spring, if we hadn't decided to move.

" 'Well, every time anybody came the roofs were leaking to beat the band, and nobody would touch the place. Jim is waiting every day for us to come, and mother is worrying because we can't sell the place. I just wrote to Jim today to find out what to do about the roofs.'

"John Sikes, a young city fellow, who had bought old Si Mather's place, when nobody would live in it because it was so damp and musty, on account of the leaky roof, was sitting in the corner. He had fixed that old place up, and was making all kinds of money raising pigeons, and the old house was dry as a bone.

" 'Mr. Hicks,' says Sikes, 'you use Genasco Roofing, made by the Barber Asphalt Paving Company, of Philadelphia, like I did, and you will put a roof on your place at small cost, and I'll bet you five dollars you will get a couple of hundred dollars more for your place.'

"Before George could say anything the telegraph operator handed him a telegram from his son. George opened it and it just said: 'Use Genasco Roofing. Will expect you next week.'

"And George got the roofing, laid it himself, sold his place for five hundred dollars more than he paid for it, and moved away inside of a week."

REMARKABLE DEMONSTRATION.

The utility of a traction engine on the modern farm and the great saving which it effects to the farmer has recently been demonstrated in a large number of cases. The showing made in power transmission and low cost of operation marks a new era in the use of machinery on farms where a number of horses are usually employed.

One of the most remarkable recent demonstrations was that near Stratford, in Kings County, on the farm of Anthony Ambrosini, when a Fairbanks Morse 12-25 H. P. Oil Tractor was used to pull an Eight-gang 24-inch Disk Plow, plowing six to eight inches deep and seven feet wide. The soil had been cultivated before but was pretty firm with quantities of Bermuda grass roots. It made a perfect score, plowing a seven-foot step, nine miles long, or three times around a half section, i. e., one mile long and one-half mile wide.

The Fairbanks-Morse 12-25 H. P. Oil Traction Engine which was used in this demonstration, as well as in several demonstrations of a similar nature made around Ventura and Oxnard, is the latest adaptation of the internal explosion engine for use with the cheapest marketed liquid fuel. It is one of the simplest, most durable and easily handled tractors on the market and will do the work of twelve horses. Can be used for belted service where 25 H. P. is required, and is admirably suited to threshing and hay baling.

It is claimed by Fairbanks Morse & Company that the new 30-60 H. P. Traction Engine which will be seen here shortly will be a great surprise for low cost of operation, excellent belted service and tractive power.

OF VALUE TO HORSEMEN.

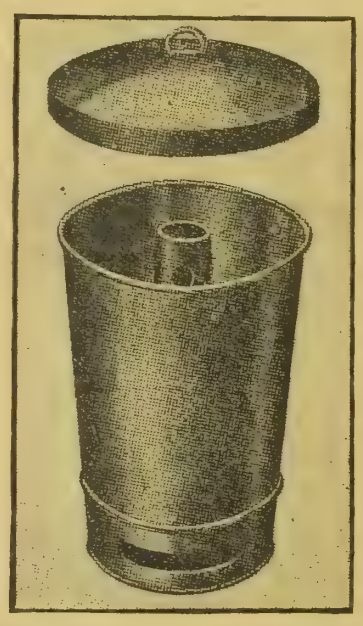
Do you turn your horses out for the winter? If so, we want to call your attention to a very important matter. Horses which have been used steadily at work, either on the farm or road, have quite likely had some strains whereby lameness or enlargements have been caused. Or perhaps new life is needed to be infused into their legs. Gombault's Caustic Balsam applied as per directions, just as you are turning the horse out, will be of great benefit; and this is the time when it can be used very successfully. One great advantage in using this remedy is that after it is applied it needs no care or attention, but does its work well and at a time when the horse is having a rest. Of course it can be used with equal success while horses are in the stable, but many people in turning their horses out would use Caustic Balsam if they were reminded of it, and this article is given as a reminder.

FOR THE ASKING.

The 1911 Autumn catalogue of the Charles H. Lilly Co. of Portland, Ore., is before us, and while it makes no great pretension as to typographical beauty, is full of much valuable information as to small fruits, seeds, ornamentals and other factors of interest to the planter. It is yet somewhat early to consider the season's planting, but the one who begins now by posting himself as to what the different seed and plant houses have to offer, is the better prepared for planting when the season is really here. A post card will secure this catalogue if The Cultivator is mentioned.

The Troutman Orchard Heaters

These are some types of the famous Troutman Orchard Heater, but the No. 1 is the size we recommend for the reason that many small fires are much more effective than half the number of larger ones. Orchard heating is far beyond the experimental stage. Mr. G. B. Brackett, Pomologist of the Bureau of Plant Industry of the U. S. Department of Agriculture, in the Year Book of 1909, following an illustration of the Troutman Heater and the ONLY one he so recognized, says: "One of these well-known and extensively used orchard oil heaters, constructed on scientific principles, has a center draft tube that feeds air to the flames, promotes combustion, and makes good use of the oil. This heater has successfully stood the test of several years. It is successful because based on the principle that there is no need for great heat locally, but for numerous small fires well distributed." In the same pamphlet Mr. Brackett also illustrates an orchard equipped with our heaters. After such a recognition of actual achievement, why should anybody hesitate to buy the Troutman? But the "knocker" is abroad and we expect him, for the reason that when the boys go into an orchard we notice they always club the best tree.



Mr. C. C. Chapman bought our heaters last year, and in doing so said: "We may not have to light them this year, nor the next, for we don't need protection as much as some other sections do, but we'll get it **(a freeze)** some time, and I'm going to be prepared for it." That's hard-headed business. Another grower to whom we sold and who had a five thousand dollar crop frozen the year before, borrowed every dollar with which to build his underground cistern for oil, his heaters and tank wagon. That's more good business, backed by fine nerve. Another grower said, with sulphurous heat, that his neighbor wouldn't buy heaters and he would be smashed if he was going to heat his own and allow some of it to drift over the line into the other fellow's grove. That's some selfishness, but more mule. What are you going to do? Send for our Year Book and testimonials, but better still, send your order at once to

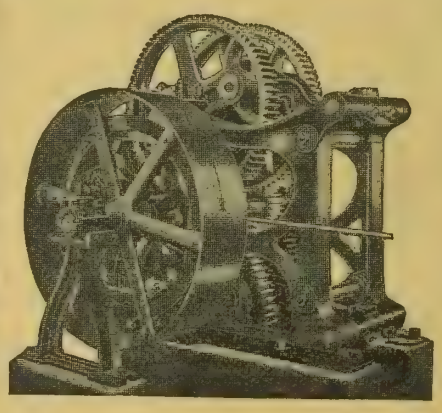
W. H. FOWLER

409 E. Second St. **Los Angeles, Cal.**

GENERAL AGENT FOR CALIFORNIA

The Smooth Running Pomona Deep Well Pump

Water is King in California, especially in the South, and anyone having crops or orchards depending upon it should not experiment. The POMONA DEEP WELL PUMPS are the standard for reliability and efficiency, and can be depended upon to do their work with less trouble than others. They are manufactured by a company who have the equipment and ability to build their machinery in a first-class manner and to install them satisfactorily to their customers.



Send for literature and price, or if possible come to Pomona.

POMONA MANUFACTURING CO.

POMONA, CALIFORNIA

Or C. H. Weed, Porterville, Cal.
Agent for the San Joaquin Valley.

MAN MUST EAT

There is money in

SUGAR and CATTLE

Share in the profits of an agricultural investment, comprising over 21 square miles of rich agricultural lands.

The land has an abundance of water in a district where irrigation, drought and frosts are unknown. Large tame grass pastures have just been prepared.

The land is free from incumbrances, which affords our investors the highest degree of security.

THE PRODUCTS OF THE RANCH ARE CATTLE AND CANE SUGAR, TWO OF THE WORLD'S BIGGEST DIVIDEND PAYERS, AND ON WHICH THE MARKET IS STEADILY ADVANCING.

In this district lean cattle fatten in four months in tame grass pastures and increase 50% to 100% in value.

Cane sugar is manufactured at one-third the cost of beet sugar.

Additional capital is required for improvements and to buy cattle to stock the ranch. A limited amount of investment certificates will be issued in units of $100 cash or on installments. Six per cent per annum interest is guaranteed, and we also share the profits with you. Option given to withdraw your money and profits or to become a part owner of this great property.

Applications for certificates will be filed in the order received. This enterprise is backed by some of the most substantial and well-known business men of Los Angeles. We invite the strictest investigation.

Send for free booklets and descriptive literature.

C. E. Reed, Secretary

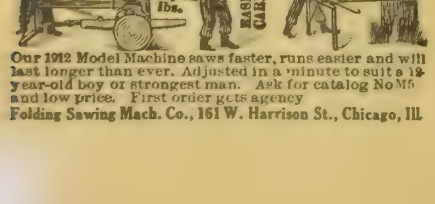
1710 Grosse Building **Los Angeles, Cal.**

SAWS

ANY WOOD IN ANY POSITION ON ANY GROUND 4 in to 8 ft. Through

1 Man with a Folding Sawing Machine **Beats 2** MEN with 2 Cross-cut Saws

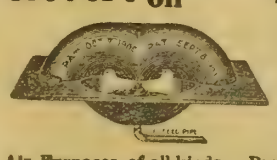
6 to 8 cords daily is the usual average for one man.



Our 1912 Model Machine saws faster, runs easier and will last longer than ever. Adjusted in a minute to suit a 12-year-old boy or strongest man. Ask for catalog No M5 and low price. First order gets agency

Folding Sawing Mach. Co., 161 W. Harrison St., Chicago, Ill.

Sievert Distillate oil Burners



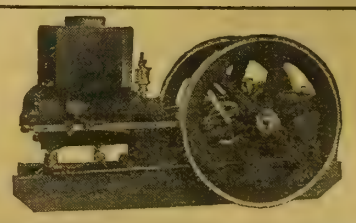
the most efficient all round Heating appliances for Stoves, Ranges, Boilers, Water-Heaters, and especially Hot Air Furnaces of all kinds. Brooder House and Heating Stoves. Send for Free Circulars.

Sievert Oil Burner Co., Manufacturers.
710 N. Main St., Los Angeles, Cal.
All Kinds of Oil Storage Tanks.

ARNOTT HARNESS $10.00 to $80.00

Everything guaranteed. Money back if not satisfactory. Factory in Los Angeles. California leather for all uses. Send for No. 10, eighty page FREE Catalogue.

ARNOTT & COMPANY 112–118 So. Los Angeles St. Los Angeles, Calif.



The Faultless Casoline Engine

1½ to 14 H. P. Guaranteed for 5 years

Nothing Better on Earth

Write for Catalog and Prices

John Schilling, Jr. C/o Davies Warehouse Los Angeles, California

HERCULES Harness, Saddles, Horse Collars

They last longer. The only sure way to get a HOME Industry Harness is to look for the Hercules Stamp. Made by

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NEAR OAKLAND, CALIFORNIA

The only Woman's College on the Pacific Coast. Chartered 1885. Ideal climate. Entrance and graduation requirements equivalent to those of Standford and University of California. Well equipped laboratories. Grounds comprise one hundred and fifty acres. Special care for health, outdoor life. Pres. Luella Clay Carson, A. M., Litt. D., L.L. D. For catalogue address Secretary, Mills College P. O., Calif

The Big Weekly { Fifty-two issues, each containing from 24 to 32 pages of practical information, } For $1 the Year

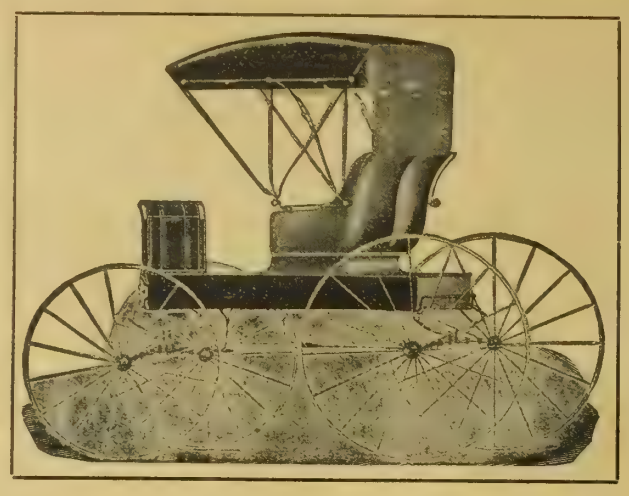
CALIFORNIA CULTIVATOR

An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch.

LOS ANGELES NOVEMBER 9, 1911 SAN FRANCISCO

A Footbridge in a California Forest Reserve

—Courtesy State Forester Homans.



1912

Arnott Buggies

Splendid styles, well finished and made of the best material. Made specially to our order BY THE LARGEST VEHICLE FACTORY IN THE WORLD.

Superior to Any

The fact that ARNOTT & COMPANY sell more vehicles than any house in the Southwest makes it easy to select the best values at prices that permit us to sell you a better vehicle for less money than you can get elsewhere. Our orders are keenly sought after by the best builders.

Fully Warranted

Every job we sell, regardless of price, is fully warranted for one year from the date it leaves our warehouse. This warranty is fully lived up to.

Good Values--Lower Prices

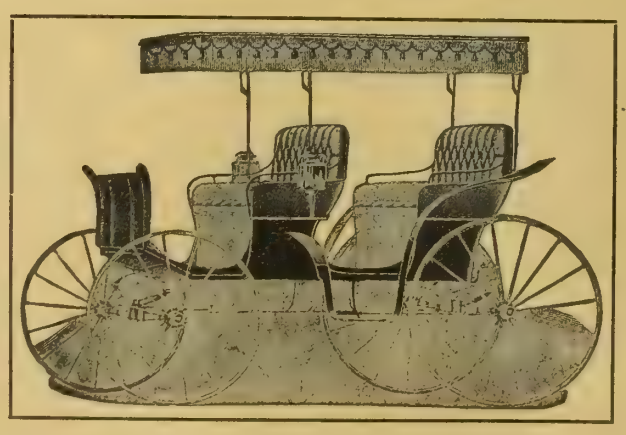
We assert positively that we give better values, styles and finish than can be bought elsewhere for more money. We have the exclusive sale of the celebrated ROUND CORNER ONE PIECE BODY. Write for large fully illustrated catalogue, sent free on request. A copy of this catalogue (80 pages) will save you money, regardless of where you buy.

ARNOTT & CO.

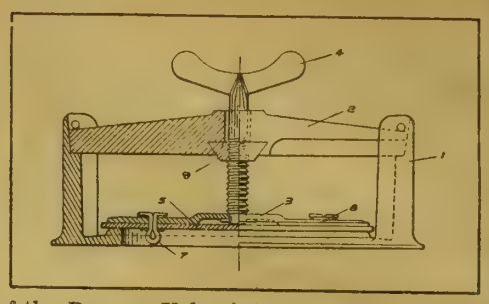
ESTABLISHED 1892

112-118 South Los Angeles Street

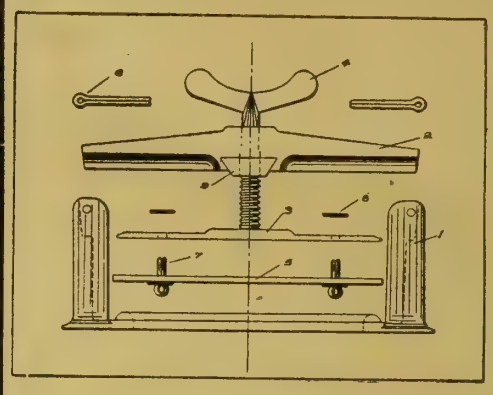
LOS ANGELES



Pomona Circular Valve



The main object of the Pomona Valve is to construct a very cheap and simple valve, and one that requires no special tools or wrenches or experience to operate.



The Pomona Valve is constructed with non-corrosive parts, thus insuring a workable valve regardless of infrequent use. All fastening held in place by cotter pins, thereby making a very cheaply constructed valve and yet a very substantial one.

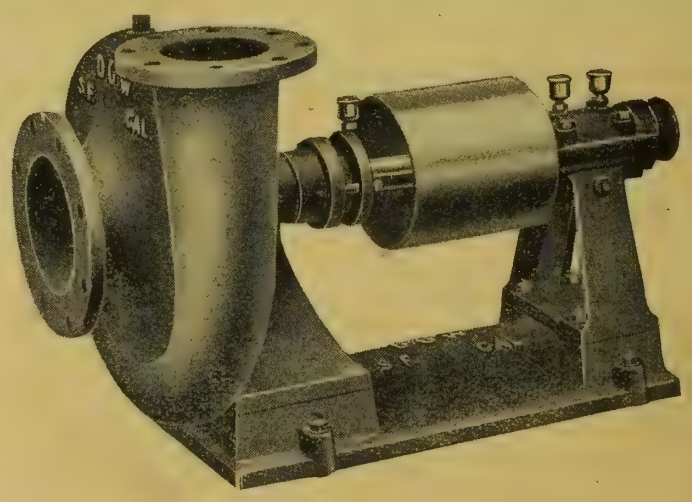
Valve Parts

1 Frame
2 Cross Bar
3 Top or Lid
4 Brass Thumb Screw
5 Gasket
6 Cotter Pin
7 Cotter Pin
8 Cotter Pin Washer
9 Brass Nut

Write for Catalog

Pomona Manufacturing Company

POMONA, CALIFORNIA



Prompt Action May Save You Money

By placing your order immediately for that pumping plant, you can probably save money, for this is the season when construction work can be pushed. Also by putting your plant in now, you are safe against a dry winter.

Remember that

Dow Pumps

save money for you every year, because they have no complicated devices to cut out by sand, the quantity of water pumped does not fall off after long use, and the power required to drive them is low.

Nor is the price high.

Write or call at either office.

GEO. E. DOW PUMPING ENGINE CO.

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235 S. Los Angeles St.
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For deep well pumping use the

DOW NON-PULSATING PUMP

California Cultivator

Vol. XXXVII. No. 19. LOS ANGELES: THURSDAY, NOVEMBER 9, 1911 One Dollar the Year

Splits of the Navel Orange---Cause and Remedy

Dr. J. Eliot Coit, of the Southern California Pathological Laboratory, Writes for Cultivator Readers of His Observations. Deep Irrigation and Thorough Culture, with Good Weather Conditions, Make for Perfect Fruit

The time of year is again drawing near when oranges will color up and owners of orchards will feast their eyes on the beautiful sight while indulging in mental estimates of the number of boxes per tree. To have the satisfaction of beholding one's orange trees loaded with fine fruit spoiled by the presence of a large number of fruits cracked and split open is indeed vexatious. Many have been the inquiries in regard to the cause of splits, and many the theories advanced. To date, however, nothing of value in the way of a cure or means of prevention has been brought forward. The only excuse for offering my observations and conclusions at this time is the insistent demand for information.

Losses From Splits Heavy.

Counts made in eleven packing houses in Southern California showed that on the average eighteen per cent of the culls was due to splits. This represents only a part of the loss, as most of the badly split oranges either drop from the trees or are discarded by the pickers and never reach the packing house.

It is difficult to estimate, with any degree of accuracy, these losses in dollars or cents, but in my judgment $50,000 a year on the average would be conservative. While it is the intention of most packers to exclude all splits from long distance shipments, these are not all a dead loss, for local peddlers pick over the culls and pay from fifteen to twenty-five cents per loose box for the slightly split but otherwise sound oranges. These are consumed locally, Los Angeles being a very good market for splits.

Mostly in Navels.

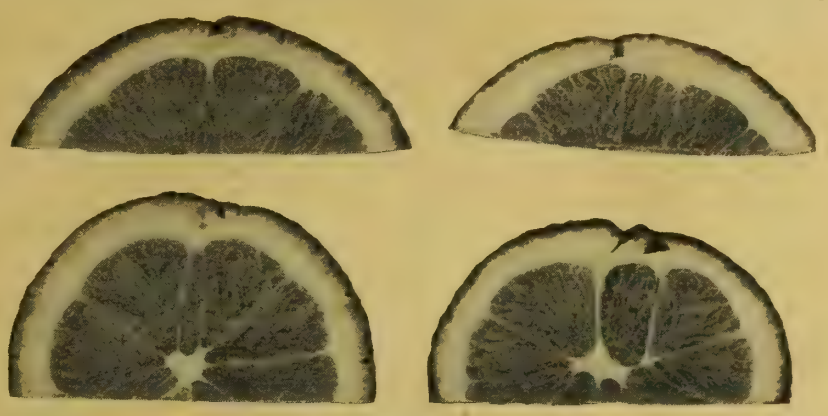
Splits are almost wholly confined to Navel oranges, and the percentage of loss runs much higher in the hot interior valleys than near the coast. Furthermore, the amount of splits varies markedly from year to year according to the weather conditions. The losses in the 1911 crop were unusually heavy, while from present prospects the outlook for the coming crop is more encouraging.

The most common theory in regard to the cause of splits is that an irregular water supply, causing wide variations in the moisture content of the soil, produces a greater fluctuation in the growth of the interior than in the skin of the orange. Such a theory is quite reasonable, but I am convinced that such moisture fluctuations are a contributory cause only. In support of this I have only to point to the fact that even in the orchards suffering most from splits there is always a large proportion of sound oranges. If we charge splits to irregular moisture conditions in the soil which affect the whole tree, why do not all or nearly all of the oranges split? Surely some other important factor must enter into this problem.

Two Kinds of Splits.

Observation in the orchard reveals the fact that there are two kinds of splits, viz., side splits and navel splits.

Side splits occur from the time the oranges are half grown until they are colored. They originate on the side of the orange, and in many cases the fruit is split wide open, the two halves often standing at right angles to each other. By cutting cross sections of oranges in the earliest stages of side split, in nearly every case a small cavity will be found in the spongy tissue of the skin. Evidences of this long, narrow cavity appear on the surface as one or more slight grooves running part way from stem to navel. The epidermis over these cavities is usually so very thin that it cannot stand the strain of interior growth which takes place when a sudden supply of soil water occurs contemporaneously with a high relative humidity of the air. Most of these side splits either fall to the ground or are discarded by the pickers, and consequently very few are seen in the cull heap at the packing house.



Cross Sections of Incipient Side Splits, Showing Cavities in Skin.

Upper Row Side Splits; Lower Row Navel Splits. —Photos by Coit.

Navel splits originate at the navel, the opening in the skin working back toward the stem. There may be one or several separate ruptures. While a certain proportion of the affected fruits may open so wide as to be worthless, still a very large number develop the split to a slight degree only. While such fruits are as good as any for consumption, it is very unwise to attempt to ship them long distances. No matter how small the split may be, the brushes are almost sure to inoculate them with mold spores, and as a consequence the fruit decays in transit. Although the loss appears large, it is good policy to grade all splits out of the pack and dispose of them locally.

If a number of navel split oranges are cut in longitudinal section it will be found, almost without exception, that the thickness of the rind varies, being quite thick and often creased at the stem end, and as thin as paper near the navel. Specimens with uniform thickness of skin very rarely split.

Relation of Weather to Splits.

The loss of moisture from the foliage and fruit of the orange tree is influenced by four factors, viz., the velocity, temperature and relative humidity of the air, and the intensity of the sunlight.

At irregular intervals during late summer and fall the principal orange districts of California usually experience periods of several days when a dry, hot east wind blows from off the desert. When the wind changes the sudden inflow of moisture laden air from the sea produces a very marked change in the weather conditions. During such dry "Santa Anas" we find all four transpiration factors at their maximum. At such times the air movement is rapid, the relative humidity lowest, the temperature highest, and the rays of the sun most effective. Considering these conditions, it is not surprising that the pull or demand of the air on the plant for water should be tremendous. The writer has maintained at Whittier, Riverside and El Centro, during the past summer, porous cup atmometers which measure this evaporating power of the air. During the fairly mild east wind of October 6, 7 and 8 the evaporation figure at Whittier averaged 48, while for the three succeeding days, October 9, 10 and 11, the figure dropped to 30. Whenever one of these dry spells occurs just before irrigation the growth of the skin is checked, and whenever the return of moist weather coincides with the application of irrigation water the sudden resumption of growth on the interior of the orange proves too much for the paper thin skin about the navel, and splits follow as a natural consequence.

How Splits May Be Prevented.

No man can control the weather, and hot, dry spells are liable to come just when they are least desired, but for all that it is my belief that the control of splits is not a hopeless proposition. As far as the old established orchards are concerned, about all we can hope to do is to reduce the variation in soil moisture to a minimum by skillful irrigation. Such a practice is also highly desirable on account of the benefits derved from a reduction in the amount of mottled leaf, gum disease and scaly bark.

The fundamental remedy for both navel and side splits, however, lies deeper. We have seen that sudden variations in the weather act as a contributory cause only, the primary cause being imperfections in the skin and variations in the thickness of the skin. **By careful selection of bud wood we may very largely eliminate such undesirable types.** If it is possible by careful selection of thornless bud wood to produce thornless trees, it is possible by the same method to produce trees bearing navel oranges free from creases in the skin and variations in the thickness of the skin—Navel oranges running to the ideal shape and size in high percentage and which will not split despite the most unfavorable weather conditions.

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TARIFF CAMPAIGN.

The lemon people are making a strong fight for the retention of the cent and a half tariff which now obtains on lemons. If the strongest effort will win the lemon tariff will be retained. The tariff question has ceased to be as much of a partisan issue as it was. In Republican ranks are many who would see a revision downward and in Democratic ranks many who would see protection of worthy and struggling industries, so that the following quotation from a circular sent out from Washington is not an exhibition of partisanship on the part of the Cultivator—merely a showing of one of the efforts to protect California fruits from the Southern European competition. This is not given to encourage greater effort on the part of the lemon men so much as to encourage other fruit growers to be looking out for their own welfare in this tariff revision fight. The lemon men have made a strong fight and they have been brought to the attention of the public more than almost any other fruit growers of the state, but there are other industries which need the protection as much as lemon raising. Let our walnut, raisin, prune, and other producers get busy with some of the energy the lemon growers are showing. From the circular mentioned we quote:

* * *

The Circular

Some phases of the tariff revision war are peculiar, and almost humorous. When the Payne-Aldrich bill was under discussion, the most insistent demands for reduction of duties were voiced by the importing interests, which naturally have no sympathy at any time with American industries or American labor. In the present fight, certain importers have sought and obtained the co-operation of foreign producers, who are submitting to a tax for the creation of a fund with which to fight protection in its lair, and to influence legislation right here in Washington.

It is a fact well known, now, that speculators in Palermo, Sicily, and in New York City, have joined hands to secure a reduction in the lemon tariff which in 1910 paid into the U. S. treasury the very respectable sum of $2,233,527.87 as compared with collections of $1,351,758.88 for 1909, the year before the new tariff went into effect. As a tariff producing a substantial revenue, this appeals to conservative Democrats, while as a measure giving reasonable protection to a growing home industry, it is favored by Republicans and protection Democrats alike. The consumer does not suffer by it. On the contrary, he is benefited by competition which would not exist if the tariff were wiped out or reduced to a figure which would not allow the American lemon growers to exist, or which would keep them out of the New York market. With no tariff, or an inadequate one, the American growers would hardly be able to sell the fruit east of the Alleghanies. This would give the Sicilian fruit an absolute monopoly of that section of the United States, by reason of the lower price at which it can be produced, and the cheap ocean freight rate to New York. As the business is in a very few hands, combined under a close working agreement, and as it enjoys further the protection of the Italian government to an extent which practically offsets the benefits derived in this country from the tariff, the New York price could and would be kept at a figure limited only by the rapacity of the importers and the ability of the public to pay. Any attempt by the American growers to invade the eastern markets could be met, as in the past, by a temporary reduction in prices which would drive them back into their limited western territory with severe losses, after which the prices would again advance for the benefit of the importers.

Hiring Lobbyists.

Here is a stake worth playing for. It is for this that the Sicilian growers are giving up an assessment which has ranged from four cents to ten cents on every box of lemons shipped to the New York market. It is for this that they are vociferously demanding the reduction or abolishing of the lemon tariff. It is for this that they are hiring lawyers and lobbyists, to try to influence legislation. It is because of this meddling with American legislation that the names of certain Congressmen, who are held to be friends of the Sicilian lemon growers, are spoken freely in the home of the Camorra and the Black Hand, and that they are referred to as friends of the alien rather than as representatives of American industry.

With a well-financed campaign like this, aimed at an American industry, it becomes necessary for the lemon growers to defend their commercial existence. Through their mutual organization, they employed the foremost expert in their line in the world, G. Harold Powell, whose investigations for the department of agriculture in California, Spain and Sicily demonstrated his high standing as a practical scientist. It was decided to procure detailed figures showing the cost of producing lemons in California and also to procure full data regarding the industry in Sicily, Italy and Spain, although the latter country does not figure largely in the production of lemons for export. Mr. Powell has just returned from his tour of investigation, and while he has not collated his data he is in a position to substantiate all that he has said previously regarding the cost and conditions of production abroad.

Securing Facts.

Mr. Powell sailed April 18th for Europe, accompanied by Frank F. Chase, vice president of the National Orange Company of Riverside, and one of the best authorities in the world on the orange and lemon. His intimate practical as well as theoretical knowledge of irrigation engineering, and every phase of the industry, constituted him an expert and supplemented the practical and scientific knowledge of Mr. Powell, so that the investigations made by them had all the value of a dual inquiry. They studied the industry in all of the important lemon producing sections of Sicily and Italy, took numerous photographs, and found that they were able to determine the variations in the difference of cost of production, cultivation, irrigation, fertilization, yield of trees, number of trees per acre, value of

properties, cost of equipment, and all of the factors entering into the problem. They also determined the cost of transporting the fruit, and the variations in the cost of getting it from the groves to the steamships. Mr. Powell's investigation, made two years ago for the government, had made him thoroughly familiar with all the details of the business, and the growers and shippers, appreciating this fact, extended him every courtesy and opportunity to study the industry from all standpoints.

The most striking thing found by investigators was that no two groves or shippers gave the same figures as the basis of cost. This is doubtless due to the fact that the groves vary in size from a few trees to groves containing hundreds or thousands of trees. The cost often represents little more than the value of the labor of the family that cares for the grove. The greatest variation was found in such items as the cost of gathering the crop. Sometimes this would vary 100 per cent in different localities.

Protection by Bounty.

An important factor in the situation is the protection extended to the industry by the Italian government through the citrate of lime monopoly. Twenty per cent of the entire crop is converted into citrate of lime, and the government guarantees a minimum price, thereby materially affecting the price of the fruit exported to the United States. It acts practically as a bounty on the price of the fresh fruit, and in that way the Italian government does practically the same thing this government does through a customs tariff.

Mr. Powell secured a large amount of data from Rome and from the various experts in Italy on lemon and orange culture. He found that the lemon industry is now in a very flourishing condition there. Lemons constitute the most profitable crop in Italy and Sicily, and the growers are prosperous. The price of lemons to the grower is higher now than it has been for years on account of the great growth in the demand for lemons all over Europe. Lemon exporters at Palermo told the Americans that the European market is expanding rapidly and that new markets are opening up every day. With the increased demand, the damage to the crop by frosts and wind storms has resulted in an abnormal increase in the price. There is a tendency in New York, Mr. Powell found, to attribute the higher prices to the Payne-Aldrich tariff, but the tariff on lemons has had no adverse effect on the business in Sicily, where the exports are heavier than ever before. For the year following the enactment of the Payne-Aldrich bill, imports of lemons into the United States were 25,000,000 lbs. in excess of the importations for the previous year, and it is probable that the imports for this year will equal those for last, as lemons are coming over in unprecedented quantities.

European Money.

As has already been stated above, Mr. Powell found in Palermo a very vigorous organization which is collecting funds and sending them to the United States to be handled through the American-Italian importers. The existence of this fund is no secret in Italy, but its purpose is known and understood by every one. Prior to May 1st this money was collected by the American importing interests. A change was made in the place of collection on account of the difficulty of making the collection in New York. Mr. Powell learned in Palermo that the collection of the fund is provided for in the steamship rate. The rate was raised to cover the amount of assessment for the fund, and the amount of the assessment for the fund, and the amount of the increase is rebated, and paid into the anti-tariff campaign fund, with which the foreign interests are seeking to influence public sentiment, and to affect legislation in Congress.

Different Conditions.

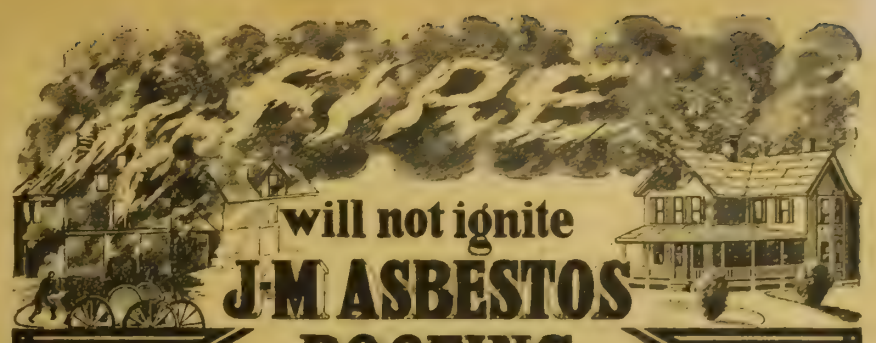
That there is a big difference between the cost of labor in this country and in Europe was fully proven by Mr. Powell's inquiries. He learned that labor is about one-third to one-fourth as dear in Italy and Sicily as it is in California, while the cost of handling the fruit is only one-half to two-thirds as expensive, and the cost of transportation is about one-third as great as it is in this country.

Another proof of the fact that foreign interests are back of the fight on the lemon tariff is the activity of Congressman Francis Burton Harrison in the fight for the importers. He comes from the "push cart" district, and the Italian pushcart men are completely dominated by the importing interests. Moreover, Harrison has said that 300 politicians in New York have petitioned him to have the duty lowered. The importers are very active, and are circularizing the trade through their New York office, but the nature of the campaign is well understood in Washington.

MELANOSE.

Melanose is a disease that starts only on the young leaves, stems and fruit. The individual marks or spots, caused by the disease, start as sunken points, which grow larger and more evident as the tissue grows older. They may reach a diameter as great as one-sixteenth of an inch. Frequently these marks are so plentiful that as they grow they run together, forming a mass or area in which the individuality of the marks will be lost. The individual markings, and sometimes the areas, become arranged in circles or parts of a circle. This is characteristic of melanose. In many cases, particularly if the fruit hangs so that water drips on to it from a leaf or branch above, the location of the areas will resemble withertip tear staining.

The markings of melanose in its mature condition are waxlike and reddish brown in color. They somewhat resemble a drop of melted sugar burned to a reddish brown color. They are slightly raised above the surrounding surface. Upon the stems and fruits the markings more frequently run together, forming areas. Where the disease is severe the stems will be more or less completely covered with the markings. Young terminal twigs, when severely affected, will die and dry up, appearing very much the same as the stained terminal branches in dieback. The fruit, when severely affected at an early age, will be stunted. In most cases it will grow to a normal size, but will have the markings more or less completely scattered over its surface. The markings are not attached bodies like a scale, but are a part of the tissue of the fruit itself. Therefore they cannot be removed, and the fruit is worthless for shipment. The development of areas is greatest on the fruit. Very often they are large, cakelike, and cracked in lines like dried mud.—Florida Fruit News.



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MORNING GLORY.

Report of Prof. C. W. Beers, Hort. Com. of Santa Barbara County.

Three months for successfully combatting this pest have been worked out on our soils and have proven reliable in different sections of the county, absolute results having been obtained in every type of soil treated.

Salt Brine.

Prepare the portion of ground upon which the morning glory is growing by plowing to the depth of ten or twelve inches and thoroughly pulverizing the soil and working it into a perfect tilth. Make this patch from two to three feet beyond the edge of the growing pest, as the roots of the weed will extend considerably beyond the outer portion of the growing top. Unless this precaution is taken the weed will be found growing up, outside of the treated portion of land.

Having prepared the soil thoroughly, saturate the entire patch with a salt brine made by dissolving two pounds of salt in each gallon of water, thoroughly stirring the brine until the salt is well dissolved, wetting the soil to the depth of eight inches, carefully examining the soil by digging down into it, to be sure the wetting goes fully eight inches in depth.

After saturation cover the patch with straw to the depth of one foot, and then wet the entire mass with water. This water keeps the right conditions of moisture for efficient results, while the straw mulch prevents evaporation and maintains a uniform condition and promotes the action of the salt on the living tissues of the plant.

By keeping the pest from coming to the light and air sour sap sets in and the entire plant is destroyed. Dry salt is not effective; to get positive results moisture must be kept up so that the salt is always damp.

We find that it requires two years for the soil to recover from the brine treatment and we recommend that additional straw be added when it is observed that the first application has settled down and become rotted. Any straw will do, grain or bean straw, or the chaff from mustard. The idea being to provide a mulch that will hold the moisture and keep out the air.

Distillate.

Follow the direction for working the ground as in the case of the salt brine method, working the soil to the depth of a foot. Wet this prepared soil with water, to the full depth and allow it to stand for twenty-four or forty-eight hours, that the soil may become free from any soggy condition. The object of this wetting being to save on the amount of distillate required to produce results. Be sure the water has moistened the soil to the full depth of a foot. After twenty-four hours or forty-eight hours, depending on the nature of the soil, wet the entire portion treated with distillate, being sure the whole surface is saturated to the full depth and immediately cover with straw to the depth of two feet and wet the entire mass with water. Any litter that will pack as straw packs will do for the mulch. The object of the mulch is to prevent the evaporation of the volatile portions of the distillate. We have proven that it is the volatile element in the distillate that does the killing, and not the asphaltum. Applications of distillate will not eradicate the roots of this pest, unless covered with some good mulch, even where there is a very perceptible residuum of asphaltum remaining in the soil, but if the mulch is provided the results are certain.

Dry Cultivation.

Put the soil into good tilth to the depth of a foot, or at least ten inches. Go over the portion treated with a weed knife that cuts from six inches to eight inches deep every fourth day in moist soil, and every fifth day in soil that is ordinarily dry. The pest must be kept from coming to the surface of the ground as the success depends on preventing air and light from reaching the opening leaves. If this is permitted even for a week, the effort will be futile, as absolute prevention of coming to light is necessary to success. Keeping the plant from light produces sour sapping of the root and destroys all life in the organism. Two years of such work will produce absolute results and in many cases there is no growth the second year. The second year growth will be spindling and lacking in vigor, and confined to small spots.

With the salt brine method two years are required to free the soil from the salt effects. With distillate the following year there are no injurious effects. With dry cultivation the soil does not suffer but is, if anything, the better for the thorough culture.

In fields where large areas are infested with morning glory we have succeeded in checking ninety per cent of the pest by seeding to alfalfa, taking care that the alfalfa secures a thorough stand in all parts of the field. After the first year those places showing any of the pest can be treated locally, by either salt brine or distillate. This method gives some return from the soil during the first year of treatment.

Plowing land infested with morning glory to the depth of a foot, carefully removing the loose earth from the bottom of the furrow and putting in a half inch of salt on the bottom of the furrow and then wetting the salt with distillate, then turning a furrow on to this salt and distillate, and repeating the process in the new furrow opened up, has been found to bring splendid results. The following summer lima beans were planted on the places thus treated and no difference in growth or maturity could be distinguished over the adjoining portion not so treated. The second year a few stray stalks came to light, but they were very slender stalks, and were treated individually.

No two sorts of soil will require the same amount of solution, as each piece must be saturated with the preparation used.

In all this processing the portion treated must extend over the portion showing growth, else the outer rootlets will come to the light and produce a new infestation.

Life's a strange thing, and worlds are mixed. The devils and the angels go up and down together; no wonder we want the telling of the sure foundation.—Mrs. A. D. T. Whitney.

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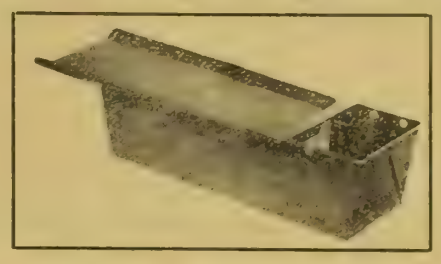
The Only Orchard Heater with Fire Control



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is equipping 150 acres of his orange groves with the King of All Orchard Heaters, having purchased

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First—On account of its large storage reservoir, therefore large heat capacity.

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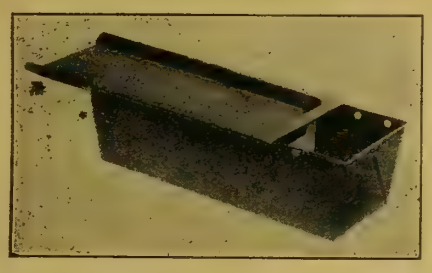
Last—Construction; cover sliding on can not blow off; no seams to leak; won't tip and spill oil.

Frost season is near; get your order in early and have protection; requires 4 weeks to deliver goods. Send for our Red Book.



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WHAT EMMER IS.

By B. C. Buffum.

Emmer is a grain which belongs to the wheat family. It differs from wheat in having two kernels of grain in each spikelet and in staying in the hull when threshed more like a barley. It is a feed grain for the fattening of livestock and is good for cattle, horses, sheep or swine. The hulls on the grain help to widen the ration, cause the animals to chew the grain well, separate the particles of food in the stomach, aiding in perfect digestion, mix in some roughage and prevent any trouble from becoming cloyed or "going off feed."

Spring emmer, often wrongly called "spelt," has been successfully grown in the West for a number of years and has proved to be of much value. The winter emmer is a new grain more recently introduced from Russia by the U. S. agricultural department. There is much advantage to the farmer in growing winter grain either for feed or flour. The winter grains give larger yields as a rule than those planted in the spring, and they can be much more cheaply produced. Winter grains succeed with less moisture and are not so much affected by drouth in dry years.

This grain is an important addition to our American farm products. Definite statements can not be made regarding its yields when planted and cared for properly on good soil, but it is safe to say that it will yield more grain and more feeding value per acre than can be secured from any other grain the farmer can grow. It should take the place of corn for stock feeding in the western country where the cool nights or the short seasons interfere with obtaining large yields of corn. It produces well where the summers are so hot that the weather interferes with the growth of spring rains. Being both drouth resistant and a winter grain, it will produce with a small amount of irrigation or rainfall.

APPLES IN STORAGE.

The shrinking of apples which are stored in barrels headed up or tight boxes in cold storage should not be noticeable or excessive, unless the apples are of a variety which are naturally soft and contain much water, or fruit was not suitable for storage. The longer keeping winter varieties should be stored under these conditions in a properly equipped cold storage room without marked shrivelling for any reasonable period up to six or eight months. The protection from drying out afforded by a tight wooden box or barrel seems to be just about the right thing for cold storage. The influence of quantity of goods in the room is, however, quite important. For instance: Take a large room with only a few apples in it, the shrivelling would be much more marked than it would if the room were filled with apples. The humidity would be much higher in a room well filled with fruit than in a room where little fruit was in storage, owing to the exhalation of moisture from the fruit which goes on continually. Eighty per cent relative humidity should be correct for the storage of apples for long periods, but we would recommend that instead of 31 or 32 degrees the temperature be carried at 29 or 30 degrees, which will mean less shrivelling than if carried at the higher temperature. Jonathan apples should keep until February or March in the best of condition if they were picked at the proper time. Immature apples will naturally shrink or shrivel when cooled down and held for some time under refrigeration, and if apples are unripe when stored the shrivelling is noticeable by January.

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A fine lot of Peach, Plum, Pear, Apple, Apricot, Fig, and other deciduous fruit and shade trees.

Also a million rooted grape vines; a few thousand nice Orange and Lemon trees, and a lot of No. 1 Eucalyptus.

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The Ornamental Garden

FACTS ABOUT THE VIOLET.

Few people passing a greensward decked with violets or inhaling their subtle fragrance, swept by the breeze from the garden near by, realize what a wealth of poetry and loveliness would go from the world with their exit. Now the violet is blooming, and as usual, it is the quick bright eyes of the children that first spy them, and their chubby hands that first gather them, and great happiness and new joy they bring to a child.

We older children know that the violet belongs to the order of Violaceae, the violet family, of which the principal genus is Viola-violet. There are about 20 species of the violet that are commonly known; of these 20 I have 10 in my herbarium, gathered and preserved from high school days.

The Latin name of most of the species so accurately describes a characteristic of the leaf or the flower that I will venture to give a few, believing that it will not be unintelligible, but to a few.

Viola, palmata—the hand-leaf violet, the leaf of which very much resembles a person's palm with fingers outstretched. V. pedata—the birdfoot or crowfoot violet with a leaf finely cut in narrow segments, resembling a large flat pale-violet flower, to many minds the prettiest of all the wild species. V. delphinifolia—larkspur-leaved, resembling the leaves of the garden larkspur. V. cucullata—the commonest of the blue violets, sometimes with white or variegated blossoms. V. blanda—the small sweet white violet in rich leaf-mould, clustering at the bases of big trees in the woods. V. rotundifolia—the round-leaved yellow violet found in the northern woods with many small flowers.

My best example of V. sagettata—the arrow-leaved violet, I found since coming to Texas. It has a long narrow leaf like an Indian arrow-head with the richest, deepest blue flower of any of the wild species.

The only variety of the leafy-stemmed ones I have found is V. canina, the dog violet, with creeping root, stocks and light violet flowers, with an unusually long spur. This is a very pretty violet.

Most people with no botanical knowledge whatever, know a violet when they see one, but few botanical students, even, understand thoroughly its irregular flower with its complicated stamens and pistil. And few know that in most varieties the propagation of its species is not perpetuated by the lovely flowers we see, but by insignificant little blossoms that come later in August or September. These lie close to the roots, little bud-like blossoms full of seed that burst and throw the seed in every direction. These cleistogamous flowers may be easily noticed in a bed of tame sweet violets.

Perhaps there are some that do not know that our garden pansy or heartsease is a member of the violet family —V. tricolor. It is a native of Europe, and whether the original wild ones were of only the three (tri) colors, yellow, purple and white, I do not know exactly, but still the predominating shades of the pansy today are these three same hues,—the colors of the violets, though modern progress has made great advancement in the nature of the pansy blossom.

The Greek name of the violet is Ion, and there is an old legend that the name came from Io, a sweetheart of Jupiter, of whom Juno, his wife, was so jealous that Jupiter caused Io to be changed into a heifer, that she might escape Juno's wrath and he created the violets for her to graze on. Anyhow, the Athenians who traced their origin to Ionia claimed the violet for their national emblem and it was very popular among the Romans.

Mohammed called it "flower of humility," saying that as his religion was above all others so did the violet excel in odor all other flowers. It still retains a peculiar sanctity among his followers. Reference to its virtues is found in the works of the early English authors, Milton, Bacon and Shakespeare, and we find that it was also used as a condiment and garnish in the old English days.

In the days of Queen Elizabeth, the use of strong essences and perfumes was introduced from the Orient into the English court, and high-bred ladies as well as those of low degree had their still-rooms and their violet-beds, where and from which they compounded fragrant violet waters, pastes and perfumes. They made the famous pomander-balls, silver or gold filagree hollow balls filled with crushed flower leaves mixed with spices,—a similar substitute to our rose potpourri, today.

But it has remained for modern times to create from the raising of violets and other scented flowers a practical industry. In the southern part of France, especially, where flowers bloom the year around are miles and miles of farms where the peasants do nothing but tend their posies and fit them for the markets, from which they are sent to the perfume distilleries, to the cut-flower markets or the confectioners, where they are made into bonbons. At Nice the violets are planted in beds shaded by orange and lemon trees and draw an added spicy fragrance from the perfume-laden air. Potsdam, near Berlin, is also a great violet center.

In our northern cities the florists are reaping profits from the sale of spring violets; not the simple flower of the garden of Eden, but the gorgeous purple, lavender, violet and white ones created by the florist's God-given knowledge. And here in the Southland many a girl has her violet-bed from which she gathers a little pin-money as she plucks the sweet flavors to be shipped to the cities.

The violet was the favorite flower of the great Napoleon and was adopted by the family of Bonaparte. On the triumphant return of "The Little Corporal" from his banishment to Elba he was greeted with violets, violets everywhere. Women wore violet-covered costumes, his way was strewed with the delicate blossoms, the air was filled with their crushed fragrance. But, alas, his triumph was as short-lived, comparatively, as the fresh life of the much-loved flower. But the violet had come to have such a significance to the French people that the Republic found it necessary in 1874 to prohibit, also, along with the photograph of the Prince Imperial, any representation of the little blue flower. Other noted men and women of France have been devoted to the

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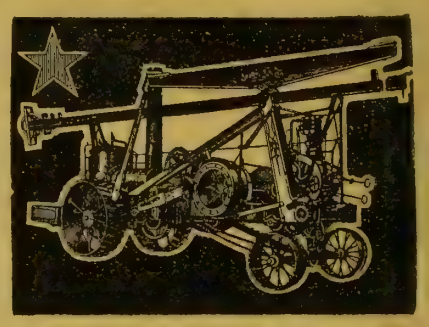

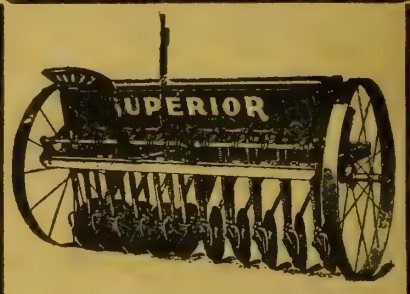

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violet and it is still the chosen flower for decorations and bouquets.

"Winds wander, and dews drip earthward;
Rains fall, suns rise and set;
Earth whirls and all but to prosper
A poor little violet."—Lowell
—Farm and Ranch.

ADVANTAGES OF PLANTING ANNUALS.

Then there are the annuals. We must not forget the annuals. As some one has said, to forget them would be like arranging the table for a good dinner and leaving off the condiments.

Many annuals can be grown successfully by sowing seed out of doors, but an earlier effect can be obtained by starting them in boxes or hotbeds and transplanting them to the yard when two or three leaves appear.

Of the kinds of annuals there is no end, but this is not saying that all are equally good; therefore, one does not care to experiment, and for a beginning should plant the kinds that are easiest to grow, such as balsams, larkspurs (some of which are as double as a hyacinth), candytufts, snapdragons, cockscombs, tall and dwarf, nasturtiums, marygolds, petunias, phloxes, mignonette, zinnias, sunflowers, verbenas, asters, sweet alyssum and vincas. I do not know where the investment of five cents will bring as great reward or give as much pleasure as in a packet of seeds of each of the above named plants. These one can depend on, while some of the newer sorts, or novelties, might prove a disappointment.

Several years ago I saw a yard where nothing had been planted but vincas. Two long beds about two and a half feet wide down each side fence were entirely covered, one with pure white and the other with pink. I never failed to stop and admire those beds. Through the whole summer they were indeed a thing of beauty, their glossy green leaves glistening like emeralds beneath a soft canopy of pink and white.—Farm and Ranch.

MAKE HOME GROUNDS INVITING.

All other questions sink into insignificance when compared to home and its environments. Intelligent citizenship and domestic tranquility ultimately depend upon home training, and home training is largely influenced by the environment of the home. Every boy and girl should have the advantages of a neat, attractive and comfortable home.

The expense required in beautifying home grounds is so small that it is difficult to see why so many people are contented to live and rear their children in unattractive surroundings. The residence may be a log cabin, yet it can be made attractive by trees, vines and flowers. It is remarkable how much plants and trees add to the charm of the home.

Those who do not own their homes should make an effort to secure them. Home always endears one to the country in which he lives, and insures greater interest in its social and political affairs. The home owner is more contented and can be a more useful citizen to the commonwealth.

Let us take more interest in making home life better and its environments more elevating. Build according to your means, then beautify and embellish with trees, plants and vines. Give thought to your plantings and intelligence to home arrangement. Build not only for yourself, but for your children and their descendants.—Farm and Ranch.

FLOWERS FOR THE GARDEN POOL

The small artificial pool is too small usually for any great variety of water lilies, but one will wish to have more than one color, and it is, therefore, important that the choice should fall upon those likely to thrive and do well in a slightly crowded area as, after once becoming established, the water-lilies increase rapidly.

Of course one must have some good variety of white lily, no matter what other colors must be denied. Of the white lilies there is no better variety than Nymphaea richardsonia tuberosa. This magnificant variety has immense flowers, which it bears well above the water. N. marliacea rosea is one of the best pink varieties, and is entirely free from all disease; it is one of the freest bloomers of all nymphaeas, the plants usually being in bud when uncovered in the spring and remaining in bloom until frost. It is a desirable cut-flower variety. Marliacea chromatella is a desirable yellow variety, with the good qualities. especially as regards early and persistent blooming, of M. rosea. These three are all desirable, medium-price varieties for amateur culture. Of course, if one cares to pay from $5 to $10 a root, there are many tender nmyphaeas of sensational size and colorings in which we may indulge one's taste; but I doubt if they will give more real pleasure than those mentioned.

The various Zanzibariensis lilies, among which are some beautiful blue specimens showing blossoms from six to ten inches in diameter, may be easily raised from seed and will bloom the first year, though the flowers will not be as large as they will be the second year.

The various lotus are always of great interest and may be grown with as much ease as the water lilies. Not the least beautiful is the Egyptian lotus, strong roots of which may be purchased for a dollar. This noble variety is of a deep rose color, with creamy white shadings at the base of the petals. A pure white lotus—N. shiroman—which has magnificent double flowers, may be purchased for $3 a plant, while N. perkinnenses rubrum plenum may be had for $7.50; this, as its name indicates, is a deep, double red variety. The lotus should not be grown in the same pool with the nymphaeas, as they are apt to preempt all the available space. and should be given a pool by themselves or have a corner partitioned off from the portion occupied by the water-lilies. The lotus requires more shallow water than the water-lilies, and where grown in the same pool the lotus side should have the earth raised so that not more than six inches of water is above it, while that in the lily side may be a foot or more in depth.—Country Gentleman.

Don't be niggardly with your flowers. Cut them for the house; give them to friends and neighbors; send them to the poor and sick, and the stranger. You will scatter "sunshine," and your plants will bloom all the better for your generosity.

Do not forget to gather seeds from only the finest flowers. It is well to tie a string about the stem of the most perfect blooms, and cut the rest. Watch the pod as it matures, and gather before it scatters the seed.

It is very important not to let weeds mature their seeds in the garden and vicinity. Eternal vigilance is the price of a weedless home place.

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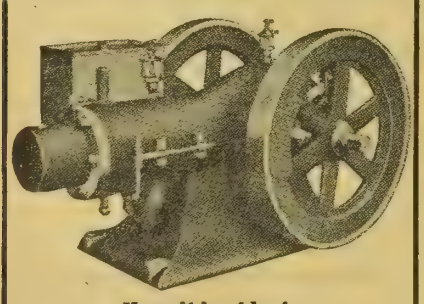

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Bees and Their Care

PRECAUTIONS ON WINTERING BEES.

By H. Perkins.

Now is the time to see that your bees are in good shape for winter. A colony of bees should have at least thirty pounds of honey in October to carry them through the winter. The entrance of the hive should be contracted to about three inches, to prevent the circulation of cold air in the hive, and to prevent robbing. Every hive should be examined to see that the cover fits down tight.

Above all things be sure that every colony has a queen, if you have any queenless colonies break them up or unite them with colonies which have queens. If queenless colonies are left to their fate in the fall, they soon die out, and their honey is robbed by every other colony in the apiary, and if the colony thus robbed should by chance have been diseased, the infection is spread right and left and the results are disastrous to the bees and beekeeper. For the same reasons it is equally important to inspect your bees after the honey flow if there is any bee disease in your neighborhood. A diseased colony in August is apt to be a dead colony by January and the honey from one diseased colony has often been known to infect fifty per cent of the whole apiary.

An ounce of prevention is worth a pound of cure, and it is safe to say that eighty per cent of the spread of bee diseases would be eliminated if the simple precautions mentioned here were closely observed.

BEES FOR PIONEERS.

A profitable industry is being developed on many of the government irrigation projects in the production of honey, and press reports from recent state and county fairs indicate that the quality of this honey is superior. The flavor is exceptionally fine and the color clear and sparkling. Alfalfa is the chief source from which the bees secure their supply, and as it blooms constantly from early spring until late in the fall, the bees have something to work on all the time, allowing a greater amount of honey to be stored.

Many of the projects are located in famous fruit sections and the combination is found to be of mutual advantage. The trees furnish an abundance of honey during the blossoming period, and orchardmen state that the economic importance of the bee from the standpoint of its value in the pollenization of fruit, cannot be overestimated. White clover and small fruits, and in the plains regions many varieties of wild flowers, also furnish sources of supply.

The bee industry is a lucrative side line for the regular farmer, but there is also a wide field for the bee man on these projects where everything tends toward specialization and where the farmers organize for the standardization and marketing of their crops. On nearly all the projects small tracts for the purpose may be purchased at reasonable rates. On many of them there are model towns laid out at intervals of a few miles. The business lots are grouped around a central square, and near the outer boundaries of the townsites the lots contain several acres each. These large lots, surrounded by wide areas of new agricultural lands devoted largely to the raising of alfalfa, are ideal locations for apiaries. They are sold at very reasonable rates, and afford opportunities for engaging in a business which pays large returns on the investment. The average price of bees in the West is probably about $5 a hive. The manager of a large apiary on one of the irrigated tracts gives the average production of his hives as 76 pounds of surplus honey per annum. At ten cents per pound the returns would be $7.60. In addition to that the increase averages 100 per cent from year to year, doubling the original investment and making a total of about 150 per cent profit each year on the original investment.

PRODUCTION OF PRECIOUS STONES.

It may perhaps be surprising to many people to learn that the United States produces almost every variety of precious stone—from diamonds down. The precious stones produced in this country last year had a value of $295,797, against $534,380 in 1909, according to an advance chapter from "Mineral Resources of the United States" on the production of gems and precious stones in 1910, by Douglas B. Sterrett, just published by the United States Geological Survey. The large decrease in the output of a few of the more important gem minerals—tourmaline, turquoise, chrysoprase, etc.—says Mr. Sterrett, readily accounted for the fall in the value of production. As an instance of this decrease in production, about 8½ tons of rough turquoise were produced in 1910, as compared with more than 17 tons in 1909.

All the diamonds produced in this country in 1910 came from Arkansas and California, the output of Arkansas amounting to about 200 stones. Several diamonds were found in California last year, one of which weighs about half a carat and another between 1¾ and 2 carats. The latter is a brilliant, clear, flawless stone, with a tinge of yellow.

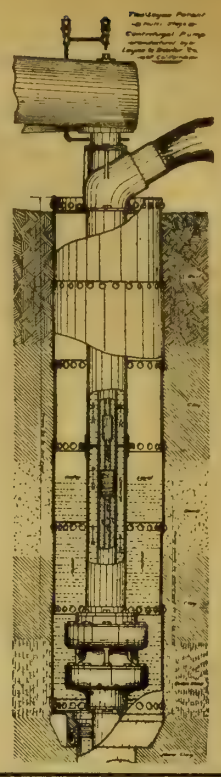
Colorado yields some very pretty agates and some are being successfully handled in the tourist trade, but a number of these stones sold each year at the summer resorts of the state are imported from Germany, where they have been polished. Others are native stones polished abroad, although some are polished in the United States.

In Montana a sapphire weighing over 4½ carats has been found. This stone when discovered had very much the shape of a rough diamond crystal, on account of which it had very great refractive power.

Bees like to work better, probably, than any other living thing. They are perfectly willing to work for nothing, board themselves, and pay handsomely for the privilege of occupying an old box.

Bees cannot carry on their wonderful work without water. If they have not access to natural sources in the vicinity of the apiary, water should be given to them.

If ants are noticed on plant or shrub be sure that they are after an insect foe, and just now the aphis is their favorite food. Spray the plants with clear water, then sift on tobacco dust.



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RAISINS. New crop seedless Sultanas, per pound, **8c.** 50-lb. boxes, per pound, **7½c.**

RAISINS. Fancy three-crown London Layer Clusters in regulation 5-lb. boxes, per box, **40c.**

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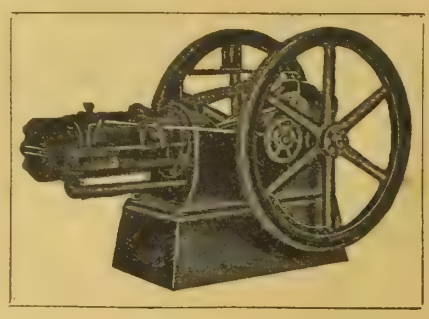

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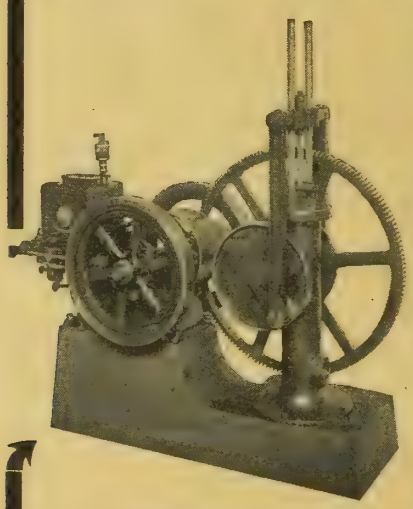

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Irrigation and Forestry

WHERE DOES YOUR IRRIGATING WATER GO.

By G. W. Waterbury, Corona.

Three years I spent in studying the effects of fertilizers on our semi-arid soils; I wanted to get the most for my money out of every pound that went into the land. As I watched the effects I saw that unquestionably there was another factor, and a big one, too, that entered into the making of any fertilizers effective, and that factor is water. Without a suitable supply of moisture a maximum benefit cannot be derived from the fertilizers already applied, no matter in what amounts applied.

Taking the average rainfall of the citrus belt of Southern California as twelve inches and allowing eight irrigations during the rainless season, the total annual amount of water placed on our groves is about 45 inches, an ample amount if every drop of water could be made to do its duty. However, a certain portion must be allowed for downward percolation and, we regret to say, a far larger portion lost through evaporation during the long dry months of the summer. For this loss we are, to a great extent, responsible.

For the even texture of the fruit, for the thrifty appearance of the tree and especially for the rapid building up of citrus trees formerly dormant, or long neglected, water in large quantities is absolutely essential. In the lemon orchards, in order to get the fruit quickly up to size, to prevent tree-ripening (always a loss financially) and to promote that vigor of limb and healthy color of leaf always noticed in the best lemon groves, water, a constant, ever present quantity of water, must always be held in the soil. Of course, I refer only to deep and well-drained soils, the only kind any citrus grove should ever be planted in.

What becomes of the water? Ask any citrus grower this question and the answer ninety-nine out of a hundred times will be the same. He does not know and I did not know; the remedy is found in the strenuous application of shovel and mattock two and three days after irrigation. With knowledge should come understanding.

The practical tests were made by Mr. W. C. McCully and myself, at Mr. Flagler's El Cerrito ranch in Corona, last September, on a representative strip of sandy loam soil. Before irrigation I had the furrows changed between the trees one hundred feet below the flume so that the water in places was diverted in double winding furrows about the trees, in others led directly by; in places two, in others three furrows between the rows of lemon trees that stood 20 feet apart. One furrow was made deep and almost flat along the lower surface in contrast to the others made by the pointed furrowing plow. There was a 30-inch flow of water on that ten acres for forty-eight hours, each furrow receiving the same amount of water and three days after the water was off the results were noted.

Mr. McCully had his Mexicans dig trenches two feet wide and four feet deep from tree row to tree row cross-cutting through every bit of soil where the water had gone. At eight inches a 3-inch plowsole was quite noticeable and just below this was the greatest amount of moisture where the furrows were far apart, or four to the row; where they were closer, five or six to the row, more moisture was above the plow hardpan. Under the broad, flat furrow the water had gone noticeably deeper and more was under the plowsole than in the case of the narrow furrows.

The greatest surprise was in the narrow width the water had spread to during the 48 hours' wetting the land had received. No place under the cultivated strip could much moisture be found over one and one-half feet from the sides of the furrow above, that is, in sufficient quantities to remain compacted when once pressed together in the hand. At three feet the water that had percolated from the recent irrigation ceased and at four feet the spread of water, though slight, was quite diversified, showing an equal and rather permanent distribution.

The spread of roots seemed always to be in proportion to the amount of water entering the soil, even though the sides of the tree receiving little of the irrigating water from directly above had been fertilized from year to year in the past. The greatest number of feeding roots were from one to two feet from the surface. In places where the water had periodically run, I found 60 to the square foot; between the irrigating rows 30, or one-half as many as where water was plentiful. There was no change in the physical condition of the soil in our trenches; its value to the tree simply a matter of where the most water and fertilizer was to be had. The water had been run on this section every 28 days during the spring and summer months.

On another section, Mr. McCully had the water run for four days and nights continually and then well cultivated and left for six weeks. Cross trenching this section from tree to tree, several weeks later, shows the soil in perfect condition, the water well spread and no dry spots down to a depth of four feet. In fact, the moisture content of the soil could hardly have been improved.

From these practical illustrations I draw the following conclusions, based on soils such as I have described: Water distributed in furrows well around the tree, get all sides to working instead of but two; keep the water away from the top surface by getting it down where evaporation is slight; irrigate less frequently but with more water. Put into the soil all it will retain and keep it there by thorough and deep cultivation. In this connection I will add that the present form of chisel-tooth cultivator will have to go in those heavy soils where plowsole is getting to be a permanent evil, shutting off the easy percolation of both winter rains and summer irrigating waters. The constant scraping of the tooth cultivator on such soils is annually intensifying the faults already brought on by the plow. In its place a rotating spader, that will both cut through the plowsole and at the same time liven up and leave the ground in a nice friable condition is preferable.

NEW FOREST LEGISLATION IN ITALY.

Previous to June, 1910, when the law on the state forest lands was promulgated, Italian Forestry questions were regulated by the law of 20th June, 1877, and some others of less importance. The law of 1877, with a view to ensuring the stability of the soil, a good water system, and, secondarily, good local sanitary conditions, forbade all deforesting and clearing of forest soil, subjecting to the vincolo forestale (forestry regime) the woods and lands denuded of trees on the summits and slopes of mountains, down to the higher limit of the chestnut zone, as well as those that by their character and position, might, if deforested or cleared, become a public danger.

The law further instituted, in every province, a forestry committee, presided over by the prefect, to settle the rules for forest cultivation, wood cutting and other delicate matters. But, in spite of these provisions, there was reason to lament an excessive and ill-regulated deforesting, giving rise to landslips, devastating torrents and floods, often producing serious crises in the economy of the mountain regions.

The necessity for special remedial measures was then apparent. Some of these were provided in the law of 2nd June, 1910, "On the state forest domain and the protection and encouragement of Forestry;" others are contained in two bills (30th November, 1910); the first on Modifications of the forestry law of 1877 and provisions for mountain pastures and agriculture, theond on "Forestry train."

The main article of the law of 2nd June, 1910, is the formation of a state forest administration as an independent institute, "to provide for the extension of forest cultivation and the trade in national forestry produce by increasing the state forest property and rendering it inalienable and by the example of a good industrial regime."

The domain is formed: (a) of state forests already declared inalienable; (b) of state forests at present administered by the finance department; (c) of state lands held to be economically only suited for forest cultivation; (d) of wooded lands purchased by the forest domain institute or in any way becoming the property of the same; (e) of treeless lands purchased or expropriated by teh same; (f) lands reafforested or to be reafforested, by virtue of special laws, by the department of public works, and that the agricultural department shall think fit to incorporate in the domain.

Woods and lands that thus come to form part of it are inalienable, and must be cultivated and utilized according to a regular economic plan, approved by the minister of agriculture, industry and commerce.

Art. 17 of the law is especially interesting. It authorizes the forestry administration to receive advances and loans from the land credit or agricultural credit institutes and the savings banks.

For the protection of forest cultivation, it is provided that the woods belonging to the communes, the provinces, public institutions, corporations associations and limited liability societies must be utilized as prescribed by the forestry authority.

For reafforestation of severely damaged woods, the department is authorized to direct gratuitously the technical labor and to give prizes of from 50 to 100 francs per hectare.

Lands, bare or covered with bush or grass, when they are scientifically reafforested by their owners or by consortiums of owners, are exempted from the land tax for 15 years, if cultivated as copsewood, for 40 years, if cultivated for the production of full grown trees.

The central or local forestry authority further gives gratuitous assistance to the forest cultivators for the defence of small mountain properties and encourages the foundation of associations and consortiums of forest proprietors.

The sum of 33 million francs has been assigned for the carrying out of the law during the first five years; at the end of which period the amounts necessary each year will be inscribed on the agricultural estimates.

To complete this fundamental law, the two bills above mentioned were presented to the chamber. By the first, provision is made for a more scientific system of preserving the woods and grazing lands and for the increase of forest industries. The vincolo forestale is modified in accordance with the dictates of science and practical experience, and the provincial forest committee reorganized with the participation of persons technically and legally qualified. The criterium of the chestnut zone, hitherto taken as the limit of the lands of the forestry regime, is consequently abolished. Other provisions deal with the penalties and the conciliation institute for contraventions of the forestry regulations.

Finally, a very important and novel portion of the bill relates to mountain pastures. It establishes subsidies for the creation, improvement and regulated use of the grazing grounds and mountain meadows and for the works connected with the regulation of the water supply. The period damaged grazing grounds must lie fallow is also regulated; this naturally causes a break in the owner's use of them, but he receives adequate compensation during the period the state is arranging for the restoration of severely damaged grazing grounds.

The second bill has reference to "forestry training;" in it the foundation of a "higher forestry institute" is proposed, the principal object of which is to provide for the superior technical instruction of the forestry officers required for the service of the special state forest domain institute and for the application of general and special forestry laws. It is also proposed to institute a "royal forestry experimental station," to assist in the progress of forest cultivation by means of scientific and technical research. Finally, provision is made for secondary forestry training, itinerant teaching and for the training of the forestry guards.—Summarized from the Bulletin of Economic and Social Intelligence, published by the International Institute of Agriculture.

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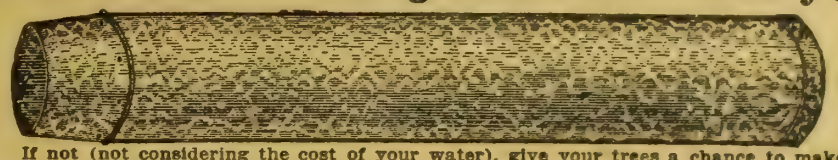

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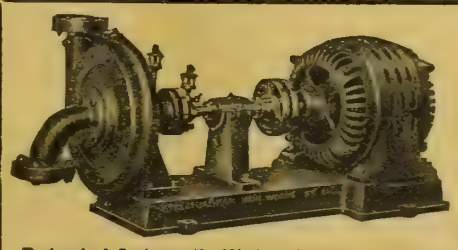

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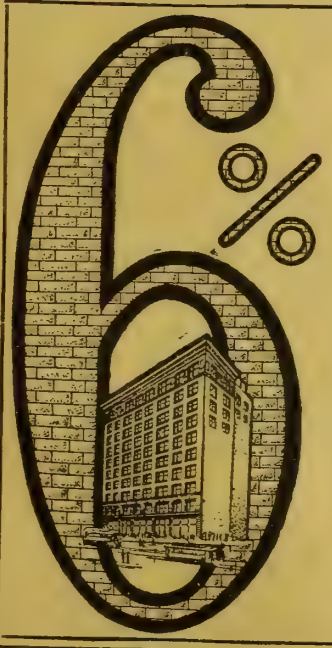

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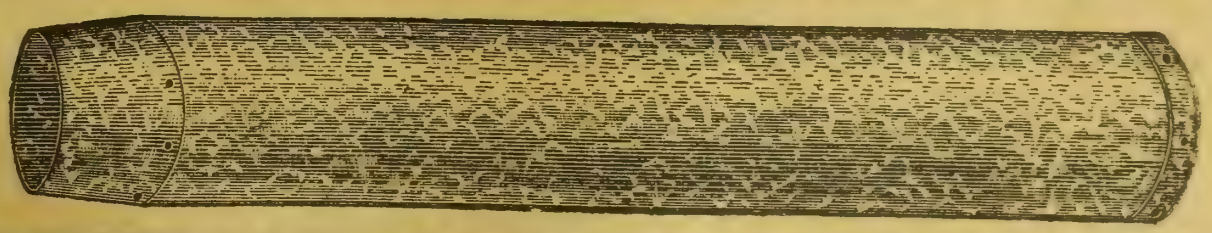

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DECIDUOUS LEAGUE.

Dispatches announce as the result of a big meeting of fruit growers at Newcastle on Monday that the deciduous fruit districts have decided to extend the fruit standardization scheme, and also to organize the Deciduous Protection League. This organization will be in charge of former State Horticultural Commissioner J. W. Jeffrey.

EXTERMINATING A PEST.

The latest publication from the agricultural experiment station at Berkeley is Circular 69 on the extermination of morning glory by Frederick T. Bioletti. Several illustrations are used with the text, and all told, with the 12 pages making up the circular, a fund of information is given which will be valuable to those who have places infested.

POULTRY

The preliminary statement of quantity of live stock in the United States shows the value of poultry in this country in 1910 to be $153,394,142. This is an increase of nearly $70,000,000 in the decade. As to numbers in the different classes we may add that there were reported for chickens 5,577,218 farms with 280,340,000 birds, for turkeys 852,000 with 6,888,000 birds; ducks 503,000 with 2,904,000; geese 661,000 with 4,341,000; guineas 339,000 with 1,765,000; pigeons 99,00 with 2,730,000.

ANOTHER EARLY ORANGE

Imperial Valley announces that its first navel oranges will be offered in the Los Angeles market on November 10th. Arizona has heretofore furnished our highest grade of early oranges and Imperial Valley conditions closely resemble those of Arizona. It is possible some of these "lowest down orange groves in the world"—meaning altitude, of course—will yet be producing some of the highest grade oranges. Butte County and Tulare County are shipping early, well-colored fruit, but Arizona seems to be receiving high prices.

JUICY JOYS

The Florida Citrus Exchange is mailing advance proofs of the "Juicy Joys of Florida Fruit", which it adds is "stored sunshine suggestions," a bunch of fruit recipes. We notice that in the first few paragraphs the word California appears almost as often as does Florida, for example: "Florida oranges are best because they are the juiciest, containing from 40 to 60 per cent more juice than California Navels." However, this is a compliment to California oranges, for the entire circular shows a desire to hold up the Florida oranges to as near the standard as possible, California, of course, furnishing the standard.

The booklet contains several suggestions as to buying, keeping and eating citrus fruits, and many recipes from Tangerine Bouillon through the whole list to Florida Orange Candy.

STATE COMMISSION.

Mr. E. O. Essig, formerly horticultural commissioner of Ventura County, and one of the hardest workers who has ever taken up the enforcement of quarantine laws in this state, has gone to Sacramento, presumably to act as secretary to the new horticultural commissioner, Prof. A. J. Cook. Mr. Essig is abundantly qualified to take up this work and we believe he will be a great factor in the enforcement of the quarantine laws of the state.

Mr. Frederick Maskew arrived in Los Angeles from Sacramento last week to take up his new work of deputy state quarantine officer for Southern California. He will have charge of all the quarantine work in Southern California with special oversight of the harbor of San Pedro. Mr. Avery S. Hoyt will be in charge of the San Diego office and Mr. C. H. Vary, formerly Los Angeles County inspector at Pomona, will assist Mr. Maskew in the work at Los Angeles.

We are glad indeed to know that Miss A. G. Bird, efficient clerk of the office for years, beginning under Elwood Cooper, is to be retained.

As we go to press we are informed of the appointment of G. E. Merril, of San Jose, formerly of the United States Agricultural Department, as Chief Deputy State Horticultural Commissioner; also of the appointment of E. J. Newcomer, recently of Stanford, who is to be assistant under E. K. Carnes, who the dispatch announces will be retained as superintendent of the state insectary. The same dispatch announces that O. E. Bremner will remain in charge of the San Francisco office, and will be assisted by Messrs. Compere and Whitney.

FLORIDA'S GREEN ORANGES

The shippers of Florida oranges have had a jolly scrap on all through the earlier shipping season. The Fruit Exchange, co-operative and on identical lines with the California Fruit Growers' Exchange, took the stand that green fruit shipments must stop. It went to its own state legislature and urged the passage of a bill which aimed to control the shipping of green fruits. When shipping began it worked under this state law and under the rulings of the pure food commission. It circularized the trade, warning against receiving green fruits. This action led to the charge that the exchange was no friend of the producer and was frightening the trade. The exchange, on the other hand, maintained that the trade had been worse than frightened in past years by sour and unripe fruit. It has won its point and now Florida is sending out fruit which is being received well by the trade and creating a demand for more of the same kind.

California shippers have listened to the song of the siren of big prices for early and immature fruit and have been restrained with difficulty, but we believe all along the line this year there has been greater care. This may in part be due to Wiley, but more to common sense, for if the shipping of green fruit is stopped the entire industry will receive better returns.

SOIL FERTILITY LEAGUE

The latest organization looking toward an "uplift to agriculture" is the National Soil Fertility League with headquarters in Chicago. We note that its advisory committee consists of President William Howard Taft, various presidents of railways, and even the president of the Federation of Labor, but mighty few farmers. The list is saved by the two names carefully placed at the end, those of Henry Wallace and W. D. Hoard, both the best of friends of the farmers and the best of farmers themselves.

The league announces as its purpose "to secure the general application of scientific methods of agriculture and by these to increase vastly the yield per acre of farms." It invites all citizens interested in the promotion of the general welfare of the country to assist in arousing public interest in this "nation-wide movement." The statement is made that the Old World's average per acre is from two to three times as great as the 14.3 bushels per acre produced in the United States, and this upon ground that has been tilled for centuries." One solution of this problem is the inducing of farmers to secure the knowledge offered by the Department of Agriculture and the various state experiment stations and put it into practice. The Department of Agriculture was created many years ago to help the farmer to get better returns. It is doing some excellent work, but too few farmers take advantage of the information which is theirs for the asking. The circular also suggests that field demonstration is necessary. The local conditions of the farm must be considered. One very definite suggestion is that each one of the 3000 counties, considered agricultural counties in the United States, be given an expert demonstrator at a salary of $3000 per year, or a cost for the whole United States of $9,000,000, the price of only one battleship, or ten cents per capita. With our annual crop valuation of about $100 for each person in the United States, it may readily be seen that if that crop could be doubled or even increased 50 per cent, it would be a great step toward feeding the world.

Our first question would be, "Where are the 3000 competent instructors to come from?"

BEET GROWERS WANT JUSTICE

It is reported that Secretary Wilson has said that the efforts on the part of the government to put the sugar beet industry in a more satisfactory condition have not succeeded as was anticipated by its well wishers. It is further intimated that the Secretary hopes that the Department of Agriculture may get hold of the situation in a way that will increase the output.

Southern California has proven so remarkably well adapted to the growing of the beet that production has increased in that section more rapidly than in any other portion of the United States. Other sections of the state are experimenting and hoping to have the same growth. Meantime the price of sugar mounts skyward. Now the housewife receives only about eleven pounds for $1.00. Compared with prices 100 years ago this may be considered exceedingly low, for at that time beet sugar was made at a cost of about 80 cents per pound and the amount extracted from beet roots was four or sometimes as high as six per cent. Even then, the method of refining was so crude that only about one or two per cent of the weight of the beet was secured in sugar. Since then, both method and cost of production have materially changed, as have method and cost of growing a ton of beets, but the advantages have gone to the manufacturer rather than to the grower. Congress has been used as a tool to protect the manufacturer, but not the producer, except in the infinitely small way of taking what the manufacturer saw fit to allow him.

Recently Southern California planters have organized and are insisting upon their rights. They should be given treatment which will encourage them to remain in the business of beet growing. The manufacturing should be a business by itself and conducted by those whose life work it is, but if the growers are denied justice, then co-operative manufacturing is possible. It must be admitted, however, that the manufacturing of beet sugar involves a great outlay of capital. How great we do not know, for many who appear to be informed, state that it is no such figure as has been claimed by manufacturers. But co-operation is proving more and more successful every day, and if the growers are forced to it they can show co-operative sugar factories.

Whether the government can take a hand in this matter through its Department of Agriculture, we do not know, but the time is ripe for a thorough discussion of the subject.

Agricultural News Notes of the Pacific Coast

Northern California

The horticultural course at Davis is now on in full swing.

Corning, Tehama County, reports some oranges ripening and already going to market.

A drainage ditch is being planned for lands west of Gridley. It will reclaim about 10,000 acres.

The management of the Oroville Orange and Olive Exposition is getting ready for a great display.

Biggs, Butte County, is harvesting its rice crop. There are 50 acres in Japanese rice and 25 in Egyptian.

An east Napa grower raised 300 tons of tomatoes on 26 acres. Most of them were sent to the cannery.

The hop market at Ukiah is exceptionally strong and large sales have been made, some as high as 41 cents.

A rain visited the orange growing section of Butte County last week and orange growers are happy as a result.

An investment of 150,000 is promised for the irrigation and development of a large tract near Oroville.

The Petaluma Poultry Keepers Association is offering a fine list of prizes for its show to be held next month.

The Fish and Game Commission is after the salmon catchers in the Russian and other rivers of the northern coast counties.

St. Helena, Napa County, has recently established a catsup bottling establishment which is proving a successful venture.

A fine growth of cotton has been produced in Biggs, Butte County, and it is possible more extensive planting will be made later.

A colony of several families has begun development of a 500-acre tract near Palermo, Butte County. The people all came from Middleboro, Mass.

Cloverdale's annual wool sale which took place on October 21st was not a success, as only two buyers appeared and prices were so low that no sales were made.

The California State Floral Society gave an exhibit in San Francisco last week which was characterized as "one of the most beautiful collections of flowers ever assembled in the city."

Expert Husmann of the Viticultural Investigation, Department of Agriculture, is inspecting the vineyards along the American River. Mr. Husmann has developed several new varieties of grapes.

It is claimed preliminary steps are being undertaken for the largest irrigation project in the United States, in Tehama, Glenn, and Colusa Counties. Rumor has it it is backed by a corporation with $300,000,000 capital.

At the meeting of the Northern California Teachers' Association the matter of teaching farming in the schools was discussed by Mr. Crosby of Washington while some teachers emphatically endorsed the old system of education.

Having quarantined all fruit from the Hawaiian Islands excepting bananas and pineapples, the state commissioner has made a ruling that those fruits shall be packed in materials in which there is no danger of the fly being found.

Central California

Newman, Stanislaus County, wants a creamery.

Merced farmers are already seeding on summer fallow.

Lindsay's first car of oranges this season went to Manila.

Tulare County orange growers are shipping heavily of early Navels.

Merced County grain farmers report last season as exceptionally profitable.

The Randolph Fruit Company is building a new packing house at Exeter.

Practically all raisins have been taken from the trays and are in sweat boxes.

Porterville is having a scare over rabies and is now engaged in chasing mad dogs.

A pomegranate grower at Porterville sold his crop of pomegranates at $140 per ton.

Three Rivers, Tulare County, is making a showing of some exceptionally fine Winesaps.

One grape grower at Exeter reports return of $250 per acre from his four-year old Emperors.

Exeter has shipped ten cars of Emperors and is still forwarding some exceptionally fine fruit.

The Citrus Chamber of Commerce of Tulare County was entertained by Dinuba people last week.

The Chamber of Commerce of Madera has appointed H. H. Whitmore secretary for the coming year.

The orange growers of Tulare County are picking fruit later than usual on account of the pure food ruling.

The directors of the Fresno County Fair Association are pleased with the net profit of $1630 for the last fair.

Three quarters of the honey crop of Kings County has been bought by one San Francisco firm for $115.50 per ton.

One hundred and fifty dairymen and officials of the Pomona Grange of Tulare County met in joint convention and stock exhibit.

Some Tulare County orange growers are finding orchards infested with brown scale and are taking up the matter of fumigation.

Bouldin Island on the San Joaquin River not far from Stockton and containing over 6000 acres of rich land is about to be reclaimed.

Grape growers now generally concede that early shipment of green grapes this year caused immense loss to shippers of ripe grapes later.

A new packing house company has been formed at Lemon Cove, Tulare County. The capitalization is $20,000 of which $7.00 has been subscribed.

The Raisin Day Committee of Fresno has agreed to furnish raisins sufficient for 5000 loaves of bread for the shriners "Country Store" in Los Angeles.

A Stanford chemist claims he has a way of stopping destruction to growing plants by fumes of the smelters. If this be true it will save millions to this state.

The efforts of the orange pickers of Tulare County to have an inspector appointed by the pure food commission to pass upon the ripeness of oranges before packing, has failed.

Southern California

A dairy farm near Covina is importing some fine Jersey stock from Wisconsin.

One chili dryer near Anaheim lost three dry houses by fire last week. Loss was about $2500.

Expert Thurston of the U. S. Department of Agriculture is inspecting dairies in the Riverside section.

One bean cleaning establishment at Ventura is employing 65 men and women in cleaning and sacking beans.

Orange County is more or less concerned over the prevalence of rabies, both dogs and horses having been attacked.

A large orange orchard in the Rialto district, San Bernardino County, is about to be sold to a syndicate for $100,000.

The Anaheim sugar factory having closed because of scarcity of beets will soon reopen to run through its waste molasses.

Some Coachella Valley and Imperial Valley dates have this year sold in the Los Angeles market at as high as $1.00 per pound.

Walnut growers at Hemet, Riverside County, are forming an association to affiliate with the Southern California Association.

An all-day meeting of cantaloupe growers and shippers was held at Brawley last week and contracts for 5000 acres were signed up.

The San Fernando Valley will grow more beets for the Oxnard factory. Workmen are now engaged fitting 8000 acres for next year's planting.

Lemon growers of the Escondido Valley estimate they will ship at least fifty cars more of lemons than last year. Last year's output was 250.

Those traveling through the mountains of Southern California report a shortage of pinon nuts. Last year's output was one of the heaviest ever.

Capitalists interested in sugar manufacture are inspecting the San Luis Rey section of San Diego County, and landholders are hoping for the establishment of a beet sugar factory.

The state forester contemplates a step in reforestation in connection with work by the city forester of San Diego. The city owns about 7000 acres of land which it is hoped to plant.

The orange growers of Colton, San Bernardino County, have succeeded in the supreme court in their case against the cement works, the dust from whose plant proved an injury to the orange trees.

The Mutual Orange Distributors of Redlands reported at its recent annual meeting the distribution of 3170 cars of fruit during the last season. The total return for these shipments aggregated $3,612,174.89.

Cantaloupe growers of the Imperial Valley are finding it hard to perfect their co-operative marketing organization, but the effort is still being made and it is hoped to have it in good working order before the next crop.

Two cars of walnuts from Anaheim, Orange County, were put up in the New York market in competition with nuts from Southern Europe and sold above the foreign nuts. Still better, brokers wired for "more like sample."

The Coast

Oregon's total wool clip is 18,900,000 pounds.

The creamery at Roseburg, Oregon, has suspended.

Bee keepers at Hermiston, Oregon, report an excellent season.

Forty families from Texas are now locating at Albany, Oregon.

One sale of 8000 head of lambs was recently made by stockmen at Lakeview, Oregon, for $2.25.

A 12-mile flume will be constructed to conduct waters to the lands near Wenatchee, Washington.

A Walla Walla, Washington, potato grower has invented a machine for sorting potatoes, onions, etc.

Stock growers at Carson, Nevada, are complaining of great havoc in their herds from mountain lions.

It is claimed the government will spend $50,000,000 in irrigating Washington lands. This will reclaim about 1,500,000 acres.

At the fourth national apple show at Spokane on its closing day, November 25th, there will be 100 elaborately decorated floats.

The second annual Pacific Northwest Live Stock Show will be held this year in Portland and $6000 in premiums is being offered.

One nursery at Spokane, Washington, has just received an order for 100,000 apple trees, said to be the largest single order for apple trees.

Because a single walnut tree at Vancouver, Washington, is netting its owner $10 a year, real estate agents are boosting for the walnut industry.

Garfield, Washington, has produced on an average 50 sacks of potatoes per acre and the growers are receiving an average of about 70 cents a sack.

The wool season just closed at Portland, Oregon, has not been satisfactory to the sheep men. It is thought the tariff agitation has affected it unfavorably.

A movement is on foot at Kennewick, Washington, to secure a large number of high-class dairy cows and give to the dairy and creamery business an impetus.

An effort is being made to change the name of Christmas Lake Valley in Oregon to Pleasant Valley. The idea is that Christmas sounds too much like cold weather.

Washington irrigators are hoping for improved conditions under a new law which is to have more control over irrigation companies which are supplying the needs of the irrigators.

What is claimed to be the largest sale of hops ever made was that of 15,000 bales, or about 2,850,000 pounds, in Oregon last week. The sale amounted to something over $1,000,000.

The average yield of hops in California in 1909 was 1430 pounds per acre. This brought $206.30 to the acre. This year's returns will be doubtless greatly in excess of that figure.

Complaints by settlers on certain lands in Oregon that they have been denied irrigating water has been the occasion of the calling of a meeting of the desert land board, Central Oregon Development Company and certain settlers on the company's lands.

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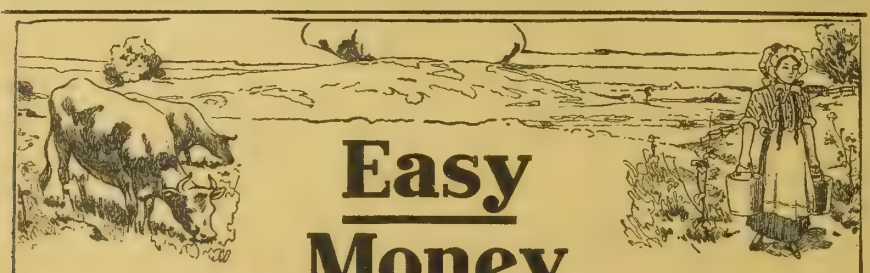

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In Steam-Dried Beet Pulp is found the ideal combination with alfalfa to make a properly balanced ration. It is light, bulky, succulent and easily digested, absorbs water very quickly and swells to about six times its original bulk. It is cheaper than bran or rolled barley and produces better results.

The combination we recommend is 8 lbs. of Steam-Dried Beet Pulp with all the alfalfa hay the cow will eat, which will be from 15 to 20 lbs. daily. It has also proven to be a splendid green food for poultry. They are extremely fond of it.

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SETTLERS QUESTIONS.

By Mrs. M. E. Sherman.

The first one is of the land. What are the natural indications of good and poor land? Where the land has had moisture to grow weeds this growth will show the character in a small way. Alkali in land will show the familiar weeds when in a small degree. When it increases, the growth is salt grasses, then more alkali and the sedges take the place of salt grass. After the salt grasses and sedges find the land too strong for them, the white spots or black ones will show. Black alkali oftener deceives the purchaser than the white. When the land is plowed the black alkali makes it look richer and moister; to the easterner it looks better than the lighter colored sandy soil around. The growth that indicates moisture and also good land in the valleys has plenty of sunflower mixed, and on that a little drier, the tar weed and blue curls come in late summer to show the quality of the soil.

Knocking.

In every district of the state are passed over pieces of land that have been knocked year after year by the neighbors, until no one believes them any good. A few years ago, say twenty-five, the weed patches of Kern were thought only fit for homesteaders. The wonderful fertility of this soil with its accumulated humus of rotted down weeds produces bumper crops. All over California are districts that are producing today crops that we have to be "mum" over, or the public, that does not know, think we are members of some Ananias club. The intelligent perception of the things under the soil has an example, in the genius that found the moisture under the white sand in the land near Ontario, now one of the best of vineyards. This man dared popular opinion and has secured, by using his own eyes, a princely property. This, too, was in an already old settled district. Another instance—not to multiply them until it becomes tedious—is Atwater. This land was considered too light by the older settlers. A new arrival looked the land over and a vision came to him of the sweet potatoes covering the land with green vines. These first planters were poor men who often paid for their land with a couple of crops. Then, while potatoes were just as good paying, the value of the land rose in jumps and bounds. Now, there are many other places still waiting for the man with eyes to see the vision of prosperity that is yet to come. Can you not be one of these men? If you will, think and think until the mind actually is filled with ideas that come teeming to its aid. We all have an unused amount of knowledge that can be capitalized.

Hardpan.

Stop knocking and go to work on a piece of land. The early comers picked the more moist soil as easier to cultivate and as giving returns at once. The earlier planting of orange trees in the valley on these lands has been pushed aside in some instances by the planting of the higher and seemingly less desirable pieces of mesa. Then came the finding out that the lower moister lands were frostier than the higher ones, and that there were frostless belts along all the foothills that only needed water to be productive. In the valleys proper were many pieces of red hardpan soils. These nearly involved the United States with Holland in a diplomatic struggle over colonies that were brought out to make homes on this land. The same lands today are thriving places with bearing orchards and vineyards. This form of hardpan is like a disintegrated granite and when blasted the good red soil is found under it. When the top soil is cultivated each year the land does not run together again into hardpan, after once being blasted open. I have an orchard on this soil that was blasted twenty-four years ago.

Blasting.

This orchard was for a time the center of much funmaking for the neighborhood. My father returning from his regular summer outing of four or five months was told on the train of the foolish way I was spending money in fireworks out at the ranch. I, fortunately, had all my holes blasted out but twenty-one. The pressure grew too great and I planted the trees in these unblasted places the same as in the blasted holes. Now, after all these years the blasted holes are supporting large vigorous trees, while in the holes not blasted, the trees are not there. I often wonder where I would have been financially if I had not taken my own way in doing things. I have made mistakes by not taking advice, but every success I have had has come against the advice of seemingly competent men. The only thing I have to say, when you see no reason for a thing after thinking it over and over, is to do it in a small way and be patient with the knockers, for, poor things, they have most unhappy minds.

Alfalfa.

The question is often asked me will it pay to blast land for alfalfa. I am watching a man now that has done this and I believe it will pay him. He secured the land cheap in a desirable neighborhood, and the rise in value now the land is becoming productive will pay him. If I had this proposition to meet, the following would be my plan. I would have a good land auger made by having a long handle crossbar at top put on an inch auger. Then I should start out by measuring off a hundred feet each way, making a square. This would give about half an acre. Then bore down every ten feet over the surface. If the hardpan comes within three feet of the surface, bore down through it as far as possible to see the thickness. Where there is three feet of soil I would plant the alfalfa. Where I could go through with a five-foot auger I would use the post hole digger and blast. By doing one-half acre the cost could be actually determined. Then if it was going to prove too expensive, the land could be used for orchard purposes. The cost having been found out in a practical way, the next thing is to estimate on trees. Peaches, plums, pears and like trees are planted from twenty to twenty-five feet apart,

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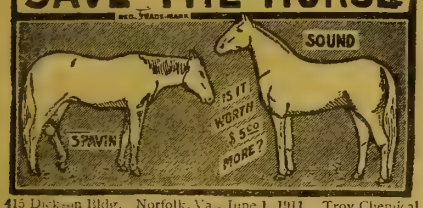

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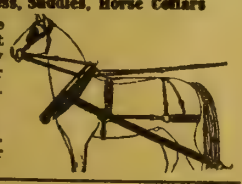

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while olives are given thirty to thirty-five. Now put a good charge where every tree is to stand. Get clear below the hardpan down to at least five feet. If after years, if it is noticed the trees are not doing so well, a blast in the open centers between the trees will let the air into the ground. The soil needs air for the roots of plants. Now if these trees after they are older, have their roots under a sheet of hardpan, they are in the same condition as trees that are growing with their roots under the sidewalks of a city.—M. E. Sherman.

MILK INSPECTION.

Of all the foods which people of the larger cities secure, probably that which is liable to contamination to the greatest extent is milk. Unnumbered deaths and cases of sickness have come from carelessness in handling it. The many ways open for its contamination, the nature of the product itself, are all favorable to carrying of disease. This has caused in some cities rigid inspection which has greatly reduced the suffering and the number of deaths, but there is still opportunity for improvement. Scientifically trained men are looking in all directions for improved methods of milk production, handling and transportation. All this has resulted in raising the price of milk, and the consumer is objecting. That is a small factor, however, when he is given purity and wholesomeness.

On the other hand the public demand for pure milk has made opportunity for some conscienceless rascals to work their little games of graft, and for others equally as conscienceless to secure positions which they are in no sense qualified to fill. This has been the occasion of great loss to many dairymen, and other unworthy dairymen have purchased the right to dispose of impure products. In addition to the clean milk problem, the tuberculous cow has given another opportunity for unjust treatment of dairymen, and we are sorry to say, rebellion against the making of proper tests.

Santa Barbara reports an experience which has caused the dairymen about that thriving city to rise in arms against the action of the local "milk commission." A veterinarian, who, it is charged, is not a regularly graduated veterinarian, was appointed chief inspector—but we give the story as told by Dr. J. H. Hester:

"The producers and consumers of milk in this locality are kept pretty well stirred up at the hands of a young M. D. who seems to see a royal road to fame through the agitation of 'sanitary milk supply,' but sad to say he seems to know nothing about how it might be secured. He secured the appointment of city health officers and then secured the passage of a city ordinance making it unlawful to keep a cow or offer any milk for sale in this city without having first secured a permit from the city board of health. This was secured by the promise that it would not cost the owners anything for the examination, but when he began to realize what a task it was going to be to examine all the cows in the city, he rushed into print with a lot of statements as to the conditions prevailing in our dairies, claiming that there was at least one lumpy jawed cow in every dairy and many showing signs of tuberculosis, and brought all the pressure that he could to bear on the city council to have them permit him to employ a non-graduate to test

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Merced Colony No. 2. Same soil, excellent location, abundant water, good drainage. Merced Colony No. 2 sold to California Farmers, men thoroughly acquainted with the soil and attendant conditions. Twenty sets of buildings already up. New settlers coming in daily. An ideal district for alfalfa, dairying and hog raising. Sweet potatoes, tomatoes, peaches and grapes thrive in the warm loam soil. Terms are easy. Write today for particulars concerning the new tract.

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SUGAR and CATTLE

Share in the profits of an agricultural investment, comprising over 21 square miles of rich agricultural lands.

The land has an abundance of water in a district where irrigation, drought and frosts are unknown. Large tame grass pastures have just been prepared.

The land is free from incumbrances, which affords our investors the highest degree of security.

THE PRODUCTS OF THE RANCH ARE CATTLE AND CANE SUGAR, TWO OF THE WORLD'S BIGGEST DIVIDEND PAYERS, AND ON WHICH THE MARKET IS STEADILY ADVANCING.

In this district lean cattle fatten in four months in tame grass pastures and increase 50% to 100% in value.

Cane sugar is manufactured at one-third the cost of beet sugar.

Additional capital is required for improvements and to buy cattle to stock the ranch. A limited amount of investment certificates will be issued in units of $100 cash or on installments. Six per cent per annum interest is guaranteed, and we also share the profits with you. Option given to withdraw your money and profits or to become a part owner of this great property.

Applications for certificates will be filed in the order received. This enterprise is backed by some of the most substantial and well-known business men of Los Angeles. We invite the strictest investigation.

Send for free booklets and descriptive literature.

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New crop seed, recleaned. *No Alfalfa Weevil* where this seed was grown. Samples and quotations on request.

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425 So. Main Street, Los Angeles, Cal.

Complete Pumping Plants

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all the cows, and have the bill sent in to the city. The consumers were getting so worked up over his report of conditions that I came out with a short article and the council refused to permit the employment of the veterinarian, and later ordered him to get busy inspecting and issuing permits, whereupon he resigned as health officer and member of the board of health.

"He next bobs up as milk inspector for the county medical society and comes forward with a list of guaranteed dairies among which are the very dairies which he declared were in such awful condition. I called up five of these dairies and was informed that neither this doctor nor any of the other members of the medical society had been near their dairies since the previous reports, that they did not consider the test necessary, but that they had to do something to quiet their patrons. Four of the proprietors informed me that the doctor in making the test on their herds had taken the first temperature at the time of injecting at about 7 or 8 p. m., and then only once afterwards at about 8 a. m. The other one said he injected and took temperatures at 10 a. m. and then at 8 p. m. and 10 p. m. and was on his road home by 11 p. m. As near as I can find out his charges were 75 cents per head and in some of the cases he had the druggist send in bill for tuberculin used. So you can see it has been a game of extortion all around. I called up the president of the medical society and was informed that this commission was composed of the former health officer, the present health officer and one other member. I also learned that this commission had been appointed since the last meeting of the society, therefore could not have had the sanction of the society."

Mrs. Sherman was asked as to method of tuberculin testing followed, especially regarding number of times temperature was taken, and from her we have:

"The tuberculin test has been worked out to a finish and no one with any amount of reasonableness should try to in any way depart from these rules in actually doing the required work. The actual work and time of taking temperatures as required by the U. S. government I happen to have before me. This test was made by Dr. Otis Longley, deputy state veterinarian:

Yearling Holstein Test.

M. E. Sherman, Fresno, Cal.

"Sept. 14. Temperatures before injections:

12M	3 P.M.	6 P.M.	9 P.M.
102.4	102.6	103.0	102.6

Injected 9 p.m. with 2 C.C. tuberculin.

Temperatures after injection.

6 A.M.	8 A.M.	10 A.M.	12 M.	3 P.M.
102.0	102.0	102.4	102.8	102.6

No local or constitutional reaction.

Otis A. Longley, D.V.S.
Deputy State Veterinarian."

"This certificate was passed on by the New Mexico authorities as well as at Sacramento, so that it is evidently exactly correct in requirements. The animal in question was sold to the U. S. government.

"It is to be deplored when the people are aroused by the fear of using milk furnished by the local dairies. I do not believe that there are many lumpy jawed cows in the dairies, for outside of the fact that the average dairyman is fully as honest and conscientious as the average man anywhere, there is the fact that there is always danger of contagion to well animals. Then, too, one of the first experiences of a dairyman is that only healthy cattle can be relied on to furnish a regular amount of milk each day to meet a regular trade.

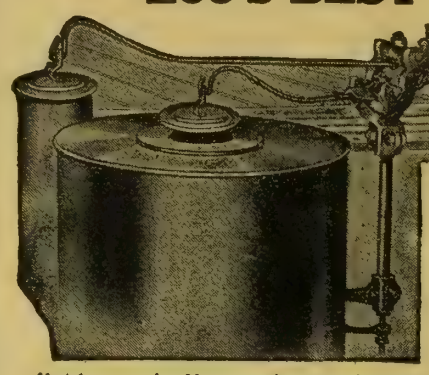
"The dairy pays so well now that a better, or rather a less ignorant, class is handling the cows than ever before in this state. The tuberculosis must go out of the herds to save loss. I often wonder when these 'hues and crys' are raised if it is realized that the tuberculosis of the cow is the bovine type and only a small percentage of the human cases are of this type. This, of course, should not be at all, yet the loss as the matter now stands is on the dairyman largely, for he must bear the expense of the tests.

"I would suggest to the dairymen that they come together, form a class and ask the university to send them an instructor and take up the testing themselves. The actual knowledge gained will enable them to judge of the work of the official testers."

It is criminal for any dairyman to place in the families of consumers any other than the purest of products, and any dairyman who is willing through his carelessness to spread contagion should be dealt with severely. It is also criminal for any so-called commission or inspector to poison people's minds against any worthy and striving dairyman. The state should have a hand in this matter so that both classes could be controlled. This is not referred to as a matter concerning Santa Barbara alone, it concerns the entire state, both consumers and producers.

1912 Incubator Sensation

Lee's BEST Invention



regulates and adjusts, *automatically*, and in correct relation one to the other, *heat, moisture*, and *ventilation*. A great new principle discovered and applied in the

Mandy Lee Incubator

High heat must have low moisture. Low heat must have high moisture. The proportions of each are vital to the hatch. Thousands of hatches are ruined from no other cause than that the *proportions* of heat and moisture are wrong. The Mandy Lee is the only Incubator that applies this principle—the only one that measures the moisture accurately and automatically regulates the amount *according to the temperature*. If the heat from any cause, day or night, rises suddenly, don't worry, the hatch will not be spoiled, because it is *dry heat*. The *moisture* has been *decreased* as *heat increased*, and greater ventilation secured—*all automatically*. This is also the only incubator with *wide-open ventilation*, such as is used in poultry houses, which proved such a great success last year. You should acquire an accurate knowledge of our latest and greatest invention. Our book *shows* and *explains*. Plain, practical, authoritative. Write for free copy.

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J. H. Hale, the "Peach King," writes: "THE DOUBLE ACTION 'CUTAWAY' is a splendid tool. I use it in polishing off my peach orchards several times a year. A good pair of horses handle it all right."

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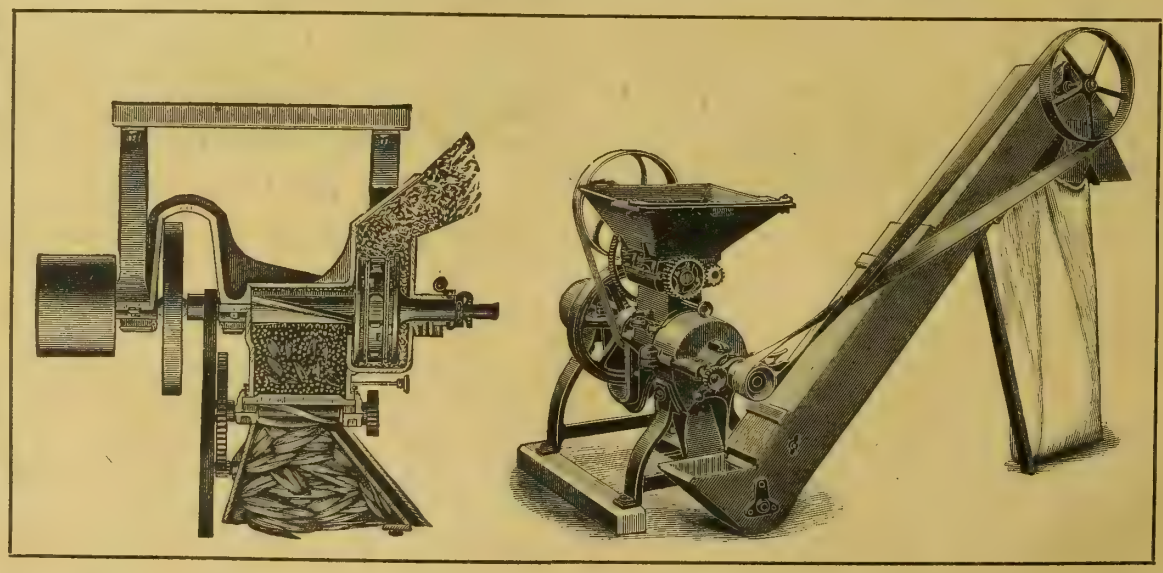
"On the whole, a bushel of corn in the form of corn and cob meal gave 9.56 pounds of increase, and a bushel of corn in the form of corn meal gave 7.04 pounds of increase, a difference in favor of the corn and cob meal of 2.52 pounds of increase per bushel or 35.8 per cent."

Will Grind Dry Alfalfa and Barley Hay, Corn Stalks and Kaffir Corn Stalks



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Can you go on in the old way, feeding from 20 to 30 per cent more whole grain than you would need to feed if you ground it, and expect the same results financially?

Can you afford to waste the large stem growth of your alfalfa and barley hay, and the stalks and cobs of corn, and stalks of kaffir corn?.

Can you neglect the opportunity to cheaply prepare a balanced feed for your horses, cattle, hogs, and chickens. recommended by every United States Experimental Station, and expect to succeed?

Does It Pay You Now? If it does not, write for a free illustrated booklet of grinding mills which are moderate in price, and which will do absolutely satisfactory grinding.

Established 1886

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Profit in the Poultry Yard

Practical poultry people who may have ideas from their experience as to methods of feeding and housing and general care of poultry will confer a favor upon the Cultivator and its circle of readers by sending in concise accounts. Mrs. Basley is always willing to answer queries, which with the experience of others should make this a most valuable feature in poultry life on the Coast. Opinions or matters of a personal nature should be omitted, but a concise statement of facts is always valuable.

WHAT TO DO WITH CHOICE COCKERELS.

In grading the surplus poultry and dividing it into lots for fattening, farmers having pure-bred flocks will find an occasional cockerel which it seems a pity to send to the slaughtering pen, says a poultryman. The owner instinctively feels that more cash would be realized from the sale of such fellows as breeders than in the form of market poultry, and he is tempted to remove them before the lot enters the fattening pen.

For the man thus perplexed there are ways in which he may utilize such fowls in improving his flock and probably in increasing the season's returns. Intelligent poultry keepers are coming to realize the necessity of introducing new blood into their flocks each season and thus the demand for good, vigorous males is steadily increasing. It is likely, if the number of such fowls is not too large, that places can be found for them in one's own neighborhood at prices considerable above their market value. In thus disposing of them, one is doing his neighbors who keep this breed, a good turn, is, incidentally, helping to build up the breed in that community and is getting rid of the fowls early.

Although better prices would probably be realized by keeping these breeders until the approach of the breeding season, it may not be possible or practical to do this, and anyway, enough cash should be realized from them to pay for the new blood which the owner is probably planning to add to his flock for next season.

Or, if there are other good flocks of his breed in the neighborhood, he may simplify the task of securing new blood by exchanging breeding males with some of his neighbors, provided that their flocks are not already closely related to his. Such exchange may apply not only to this season's cockerels, but to last year's males as well, for there should be some old fowls in this winter's breeding pens, the best plan being to mate the pullets with males of last year, and to have a sufficient number of old hens to mate with the cockerels.

But where it is impossible to dispose of these cockerels in the manner described above there are still several ways open to the man who is determined to get better than market values for them. One of his alternatives is to advertise his stock in some paper which reaches a very large number of that class of poultry owners to which his stock is suited. Another is to shape up a few of his best fowls with a view to showing them at one or two of the local poultry shows within his reach.

This should prove a good move from an advertising standpoint, for, whether his fowls win prizes or not, it brings him into contact with a lot of live poultrymen and gives him a chance to determine for himself as to whether his judgment in selecting cockerels which he considered fit for the breeding pen were good or bad. What he sees and hears at the poultry shows will no doubt largely determine the future of the breeders which he is anxious to dispose of.

If they compare favorably with those reserved by other breeders, a little business judgment should enable him to place them to advantage. If unable to turn them over for cash, the shows afford a favorable opportunity for making exchanges with other breeders, and should he return from the shows without having reduced his flock of breeding males he is really ahead if he has succeeded in exchanging them for new blood in individuals of about equal merit. True, he has not yet converted the choice cockerels into cash, but he is now in position to fit up a good number of breeding pens and produce pure-bred eggs for hatching.

The dangers of inbreeding have been eliminated, and the expense of getting these pens together has not been excessive, so that the eggs should yield a nice profit when sold at prices which farmers are able and willing to pay. A small advertisement in a medium which reaches wide-awake farmers should bring all the orders that can be filled, while honest goods and fair treatment will give this end of the business a start which will render the disposition or utilization of the choice cockerels easier and more remunerative each succeeding year.—Coleman's Rural.

SAVE YOUR INCUBATOR CHICKS

Send us the names of 5 or 10 of your friends who raise poultry and receive FREE our booklet entitled, "White Diarrhoea, the Greatest Foe to Chick Life." This booklet makes Poultry Profits Possible. It treats of only one disease, white diarrhoea—commonly called bowel trouble: gives cause, treatment, and a cure. Write today. It's free, postpaid.

F. K. REMEDY CO. **ARKANSAS CITY, KANSAS**

HICKS' JUBILEE HATCHERY

Asks you to place **Your Order** for Baby Chicks **With Them**

White Leghorns,
B. Rocks, R. I. Reds,
Buff Orpingtons

Not One Dissatisfied Customer Yet

One lady said: "The finest chicks I ever saw."
Another customer said: "Only lost 6 out of 500."
Still another: "Hicks sure can hatch fine chicks."

Capacity $12,000

It's a secret to hatch right and Hicks knows the secret.

W. J. HICKS
Route 2, bx. 154 PETALUMA, CAL.

BUFF ORPINGTONS
Mr. and Mrs. W. S. Sullivan
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COULSON'S POULTRY FOOD MADE IN PETALUMA

ARE YOU A PART OF CALIFORNIA'S POULTRY SUCCESS?

COULSON'S POULTRY FOOD MADE IN PETALUMA

If not, let us tell you how you may become an important factor in the world of poultrydom.

We grant that you know how to choose good birds. We grant that you have common sense enough to keep your houses clean.

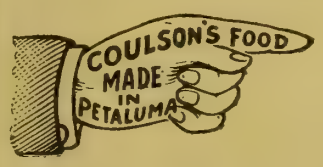
But the feeding problem is often neglected; and it is one of the main factors in poultry success.

Your children grow strong on proper food, and we grant that you try to furnish the best the market affords. You want a well-built house for yourself and family. You know what is the way to avoid doctor's bills.

You give your cattle the best pasturage you can find and you look out for their comfort—because you know it pays to do this.

And when it comes to a consideration of your poultry why not get the best food you can buy? It will pay.

We have made a study of poultry feeding. We have developed a line of foods which produce results that are highly pleasing to poultry raisers.



Poultrymen who use our goods exclusively report that they get results which are astonishing to their neighbors. It is simply a question of—Will you use the best?

Guess work is eliminated—change is avoided—failure is a thing unknown if you use our food.

It is for sale by all reliable poultry supply houses. Insist on getting it. You will get your money's worth and the flock will get its full quota of nutritive value.

TRY IT AND SEE FOR YOURSELF

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Our importation of Dutch Bulbs has arrived. This stock is the very best, and our prices are low. Come and see the display or send for free Catalog at once. Also for our large Seed Catalog, if you haven't one.

Incubator Bargain

Even if you don't want one for four to six months, you can save 25 per cent by buying now. A special offer for cash, and to make room. 50-egg size only. Send for Catalog and particulars. Big bargain. Strong guarantee.

West Coast Seed House

111, 113, 115 Winston St., bet. 4th and 5th, near Main, Los Angeles

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DUROCAR

The strongest and easiest riding car in the world

Made in Los Angeles by experienced men who understand the conditions of climate, mountains and desert.

4 and 5 Passenger, 35 H. P., $2,000 fully equipped
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FREE.—The Largest Book of Its Kind Ever Printed

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and many other interesting pictures taken from life in and around Southern California. This book is the largest and most expensive ever printed by any concern whatsoever on baby chicks, hatching, etc., etc. Tells the prices of every breed of chicken, turkey, goose, etc., that we offer for sale. Tells how we ship thousands and thousands of baby chicks safely year after year, and gives full details on the raising of baby chicks, hens, etc. Articles on every part of the chicken business are given, and it won't cost you but ONE CENT—just a post card—saying you want it.

Laying hens, PULLETS, COCKS, COCKERELS, BABY CHICKS, HATCHING EGGS, COLONY HOUSES, INCUBATORS, BROODERS, etc. Investigate—that is all we ask. Send today.

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Baby Chicks

S. C. WHITE LEGHORNS

a Specialty. If you want large, strong, healthy chicks;

CHICKS THAT ARE WELL HATCHED

from mature, healthy, and strong stock which has been bred for utility purposes for years, write to me. I want your order, for I know I can satisfy your wants, if you want the best

CHICKS THAT WILL GROW

for I have satisfied hundreds of others. I am now booking orders for future delivery. Capacity of over 30,000, which is an increase of over 200% in the last two years.

THE THOMAS HATCHERY

CARL D. THOMAS, Proprietor **Petaluma Cal. Rural Rt. 2, Box A**

Don't Make a Mistake Remember

There is but one JUBILEE. Our customers tell us that there is but one Incubator and that is the "JUBILEE."
Let us send you our Catalog. It's free.

JUBILEE INCUBATOR CO., Sunnyvale, Santa Clara Co., Cal

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Make Big Money Drilling Wells

IMPROVED STANDARD DRILLING MACHINE
One Man Can Handle
Has a record of drilling 130 feet and driving casing in one day. Only three levers. Extra large rope sheaves. Positively will drill every kind of formation. Avoid delays from sending back East. Buy from us. We build these up-to-date machines. Will tell you all in catalog. Write for it.
REIERSON MACHINERY CO., MANFRS., PORTLAND, OREGON

Place Your Order for

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WITH

The White Hatchery

Capacity 50,000 J. L. White, Prop.

We Hatch All Principal Breeds

219 Bodega Avenue PETALUMA, CAL.

COLONY HOUSES FOR POULTRY.

The main requirements of a good poultry house are good ventilation and protection from storms and cold winds. Hens will not lay when weather conditions prevent them from scratching and exercising. Many poultry houses have failed because the variations in night and day temperatures were too great. At many of the experimental stations it has been found that open front houses are more successful than houses with glass windows.

J. Dryden and A. G. Lunn, in a circular of the Oregon Station, state that—

"Ventilation can best be furnished by leaving one end of the house open or covered with burlap or canvas, using no glass windows unless necessary for light. The idea of building a warm house should be abandoned. It is shelter that is needed. The house should be built in such a way that the fowls will not roost near the open front, where they would be exposed to winds; nor should it face the prevailing winds. A long house is more expensive to build, for a given capacity, than one more nearly square. A long, narrow house is also a cold house, having more exposed surface for a given capacity than a square house.

"The size of house necessary for a certain flock will vary in different sections. Where there is little or no snow and where the fowls can be outside every day in the year, two square feet of floor space per fowl will be ample. Where the climate is such that the fowls will seek shelter part of the year, rather than go outdoors on the range, considerably more space should be provided, say four to five square feet per fowl. The idea should be not to crowd them so much that their activity will be interfered with. Whether the shelter is provided by enlarging the house or providing cheap scratching sheds is immaterial. Two square feet per fowl, or even less, is ample for roosting quarters."

W. S. Jacobs, of the Arkansas Station, states that—

"Roosts should be made low or near the ground—not higher than two feet. There are several reasons for this. Fowls of the heavier breeds cannot fly high, and those of the lighter breeds frequently injure the soles of their feet in jumping from high perches. Roosts should be made all the same heights; for if they are made some higher than others the birds will all flock to the highest ones and crowd, which is undesirable.

"When dropping boards are used they should be low down, to permit of easy cleaning. They should be made of matched lumber and be 20 inches wide for one perch and 3 feet wide for two perches, the first perch placed at least 10 inches from the wall. A good roost may be made from material 2 by 2 inches, then slightly rounded on the edges."

According to Dryden and Lunn—

"Poultry keeping is most successful when the colony system prevails. The colony system means the housing of fowls in small houses, preferably portable, where the fowls have free range. The chief advantage is that the fowls are more active or busier than when confined in yards; second, there is less danger from outbreaks of disease, as it is possible to keep the houses on clean ground by moving them occasionally; and, third, the fowls require less feeding and care, as they pick up considerable food on the range. Another advantage of this system is that the fowls will rid the farm of many injurious insects, such as grasshoppers. Then the colony system will fit in with crop rotations, and for part of the year the fowls will live on the stubble fields."

Figure 2 represents a successful colony house with a cloth front, which was used at the Utah Experiment Station. The trap nests in the rear of the building can be opened from the outside. Fig. 4 is an illustration of a Rhode Island closed front house. A good size to build a colony house is 7 by 12, which is large enough to accommodate 30 to 40 fowls, yet is not too heavy to be drawn by a pair of horses when it is desired to move it to a new location. Below are given the details for constructing a colony house (fig. 5) of this size, as recommended by the Oregon Experiment Station.

Construction of the Colony House.

The runners are made of 3-inch by 6-inch by 14-foot rough material and act as side sills for the house. They should be beveled at ends in order to slide easily. The cross sills are 3 inches by 4 inches by 7 feet. They are set 2 inches into the runers and 12 inches from the ends, and fastened with ½-inch bolts. When the siding is put on vertically there is no studding used. The plates are 2 inches by 3 inches by 12 feet, halved at each end. To the plates are nailed the 1-inch by 12-inch by 5-foot boards, and these are battened with 1-inch by 3-inch. The siding is nailed flush with the top of plate and laps 3 inches on runners. The roof is one-third pitch, or 2 feet 4 inches at peak from top line of plates. There are five pairs of rafters, cut with a 1-inch plumb cut at plate. The roof boards are 1-inch by 3-inch material, set 3 inches apart. The roof is shingled and laid 5 inches to the weather. The front is covered with 1-inch mesh wire. The cornice is made of 1-inch by 8-inch boards and projects 5 inches outside of walls. The frieze board, 1 inch by 4 inches, is nailed up tight against the cornice. The door is 2 feet by 6 feet and made from 1-inch by 3-inch material. The nest platform is 2 feet from the ground. It is nailed to a cleat on the side of the house and braced from top of runner. The platform is 22 inches by 5 feet. The nests are made of 5-gallon oil cans, the top and part of front being cut out; 2 inches is left of the front to hold in nest material, and a small strip at top which acts as a brace. Over the nests is fitted a sloping top, which keeps the chickens from standing on nests, and helps to darken the nests. The dropping platform is made of 1-inch by 8-inch ship lap, is 2 feet 6 inches from floor in front and 2 feet 9 inches in rear. The slope permits the board to be cleaned more readily. For the same reason the boards should be put on from front to rear. The perches are made of 2-inch by 3-inch material, set flat. They should also be level and about 12 inches from dropping board in front. The roosts are set 18 inches apart.

Lumber Bill.

Sills (runners), 2 pieces 3 inches by 6 inches by 14 feet, rough.

Cross pieces, 1 piece 3 inches by 4 inches by 14 feet, rough.

Plates, rafters, roosts, 134 lineal feet, 2 inches by 3 inches, sized.

Siding, 13 pieces 1 inch by 12 inches by 10 feet; 4 pieces 1 inch by 12 inches by 14 feet, finish No. 2.

Cornice, 54 lineal feet 1 inch by 8 inches, finish No. 2.

Base, 52 lineal feet 1 inch by 6 inches, finish No. 2.

Ridge and nest platform, 20 lineal

feet, 1 inch by 5 inches, finish No. 2.

Frieze and corner boards, 80 lineal feet 1 inch by 4 inches, finish No. 2.

Battens and trimmings, 330 lineal feet, 1 inch by 3 inches, finish No. 2.

Dropping board, nest cover, 80 lineal feet, 1 inch by 8 inches, ship lap No. 2.

Shingles, 1,000.

Cost of lumber, $14.51.

Hardware.

Five pounds 8d. cut nails.

One pound 8d. wire finish.

Two pounds 6d. wire finish.

Three pounds 2d. shingle nails.

One pound 1¼-inch brads.

Eighteen feet poultry netting, 1-inch mesh, 2 feet wide.

One pair 4-inch T hinges.

One lock.

Cost of hardware, $1.60.

Paint.

One gallon creosote, shingle stain.

One gallon paint.

Cost of paint, $2.

Cost of all material at Corvallis, $18.11.

A NEW STYLE OF HOPPER.

One of the late additions to the already rather extensive family of tools and apparatus for the benefit of the poultry raiser is a feeder which has been put into use at Plum Beach Farm, Port Washington, Long Island, where the owner, Mr. Charles P. Hatch, carries on a rather extensive poultry business and has a very excellent and up to date plant. This feeder is designed principally for use in laying houses where it is the common practice to have from six to ten or twelve rooms adjoining each other, the rooms being arranged to hold from 25 to 100 hens, according to size. The floors of these houses are usually covered with litter, and the grain is scattered among it for the purpose of obliging the fowls to take needed exercise in foraging for the grain. These feeders are intended for feeding grain only, but handle any size or kind. It takes considerable time and labor to measure the grain and carry it to the various houses and scatter it, and of course careless employes may overfeed or underfeed or neglect to feed at all.

To replace these conditions and secure accuracy, convenience and speed, a new feeding device is placed in the center of each compartment under the roof. Each feeder has a hopper which holds about two bushels of grain, so that they need only be filled about once a week. Below the hopper is a device to release automatically the grain from the hopper as required, and a device for scattering it about the floor of the room; the grain is evenly scattered in a circle within a diameter of from eight to fifteen feet as may be required. The feeders in the various houses are placed in line with each other and are afterward attached together by a rod extending from one end of the house to the other. This rod extends to the outside of the building at one end, and has a wheel or crank attached to it. By turning this crank a certain number of revolutions, which will take possibly one minute, a certain maximum quantity of grain will be released from each feeder and be distributed automatically. There is a pin on each feeder controlling the outlet, which may be moved in such a manner as to supply any quantity desired less than the maximum, or to shut it off entirely. With this arrangement it will be readily understood that five quarts may be fed in rooms Nos. 1, 3 and 6, three quarts in room No. 2, two quarts in room No. 5, or any other arrangement that is desired; or if any room happens to be vacant, the supply for that room may be cut off entirely and no grain will be wasted.

The use of this feeder, therefore, secures accurate feeding twice a day of, say, one thousand hens in ten adjoining rooms by one man or boy in a total of two minutes time. In addition to this, of course, it is necessary to fill the hoppers once a week, which would probably take one hour for a man. This device is the invention of Baroness Van Haeften Hatch, who takes a great interest in the poultry business. Her progressive and up to date ideas and her personal attention have been very largely the cause of making Plum Beach Farm a most extensive and enterprising poultry producer. This farm, by the way, is one of the most beautiful country places on Long Island Sound, aside from its poultry department.—Country Gentleman.

DISINFECT EGGS.

The following extract from a letter by the well known writer on poultry subjects, Mrs. Bertha M. Rigg, of Hanford, Cal., is of much interest:

"In setting an incubator, I first thoroughly cleanse the machine. I then start the lamp and regulate it to the proper heat for the eggs; then with very warm water I make a ten per cent solution of Zenoleum, and make every part of the egg chamber very wet, not missing a spot. Of course the heat will be again reduced during this process, but I close the machine and allow it to return to the proper mark on the thermometer. I then dilute a ten per cent solution a little. I never have considered it necessary to dilute but a very little for the eggs. This should be quite warm. The eggs are simply immersed and immediately placed on the tray and into the machine. If weather conditions call for moisture at any time during the hatch I add a few drops of Zenoleum to the water when placed in the machine.

"So many people fear to do this with eggs, but I have had the following results: (1) from eggs which otherwise are known not to hatch well, I get more chicks, and (2) they live after they are hatched; (3) the chicks are larger and heavier, with thick down on them; (4) bowel trouble is conspicuous by its absence, making the chicks easier to raise.

"This is why I will have nothing but Zenoleum. I have proved it and know what I can do with it."—Farm Poultry.

The premium list of the Alameda County Poultry Association calling attention to its show on November 21-27, together with entry blanks and full list of premiums, is now being mailed. If the boys put up as handsome a show as they do a catalogue they will be going some. One feature of the book is why do "Oakland Roosters Crow." The question is then answered by calling attention to some of Oakland's boosters' work and the great growth of that thriving city.

Skim milk is a good food for poultry. The fat has been taken from it and leaves it proportionately rich in protein, which is a very desirable element in poultry food. Use it to mix a mash for the chickens. You may also give them all the milk they will drink.

The water dishes should be filled early in the morning. Fowls drink as soon as they leave their roosts and water that has stood over night is never wholesome.

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Percheron Stallion For Sale—A registered, two-year-old, black Percheron, sound and gentle, weighs now 1650. Will deliver him at your town for $1000. He will pay for himself first season. Address Chas. F. Thompson, R. F. D. 3, Bakersfield, Cal.

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Three Half Bred Toggenburg Swiss Milk Does, sired by "Bismarck," also one three-quarter bred doe kid, 6 months old. Price $20 each, or $75 for all. Full description on application to W. E. Hyer, Hemet, Cal.

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Belgian Hares—Fine, healthy breeding stock, for sale cheap. Write for your wants and prices. J. A. Reinhart, Hollister, Cal.

For Sale—Shorthorn bulls and Berkshire hogs. Bred for size and quality. H. L. Murphy, Perkins, Cal.

Pure Toggenburg buck, a bargain. H. W. Shepard, Paradise Valley, National City, Cal.

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How to Make Money—Mrs. A. Basley's Latest Poultry Book is without exception the most wonderfully complete manual on the subject of successful poultry management ever written. The secret of how to raise every turkey hatched and the "Basley Formulas," now published for the first time, are worth many times the price of the book. The "Western Poultry Book" is a practical book by a practical woman. Price $1. Address Mrs. A. Basley, Box 77, Venice, Cal.

See Here. If you want some of the best stock in this world, we have it. All thoroughbred S. C. R. I. Reds, Black and White Minorcas, Crystal White and Black Orpingtons and Barred Rocks. Orders filled as catalogued. Baby chicks, hatching eggs, cockerels, and a few pens. Address, Monte Rio Poultry Yards, Newcastle, Cal.

Until December 1st we will book orders for White Orpington eggs for $5.00 for 15, from three pens of as good Kellerstrass stock as there is in the West. Every bird is a beauty and are extra good layers. This is a half-price offer. Pellett Poultry Place, Ontario, Cal.

Eggs from select White Wyandottes, White Rocks, Barred Rocks, Black Minorcas, White Leghorns. $1.50 per 13, $2.50 per 26. Hens, pullets and cockerels, $2.00 and $3.00 each. Purity Poultry Yards, 706 E. Walnut St., Santa Ana, Cal.

For Sale—Pullets, cockerels and yearling White Orpingtons (Cook strain), Black Minorcas (Northrup strain), White Minorcas, R. I. Reds (Tompkins strain), pure bred. C. U. Chamberlin, Los Gatos, Cal.

Day-Old Chicks, Barred Rock and White Leghorns, good laying strain. Order now to insure early fall delivery. The Fairmount Hatchery, 29 B Rural No. 1, Santa Cruz, Cal.

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Ring-Necked China Pheasants for sale. Pairs or breeding pen of four; also eggs for hatching during the spring season. Address T. D. Morris, Agua Caliente, Cal.

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8 ft. steel aermotor, fine steel tower, tank, galvanized pipe, pump complete, $55; nearly new 10-ft. steel Challenge mill, tower, 3000-gal. tank, 20-ft. tank stand, 2-inch galvanized pipe, pump complete, $75; also smaller outfits $39 and up.
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To Let—400 acres, Tulare County, 2½ miles north from Tipton, 7½ miles south from Tulare, on Tule River bottom. All fenced and cross-fenced; 130 acres in alfalfa of which 90 acres are good stand. Wooden gates at all intersections of checks. Good pumping plant, plenty of shallow water. Two sets buildings; 110 acres grain land, balance pasture. Will lease for 3 or 5 years at $1500 per year, or sell as a whole or divide. Will pay 6 per cent on price asked. Hoffman-Marks Co., 226 S. Main street, Los Angeles.

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We think you will agree, when you have read them, that there is no other paper that gives quite so much of such a high quality as The Companion, and it costs only $1.75 now for the 52 weekly issues. On January 1, 1912, the subscription price will be advanced to $2.00.

The new subscriber receives a gift of The Companion's Calendar for 1912, in ten colors and gold, and all the remaining issues of 1911 free from the time the subscription is received. THE YOUTH'S COMPANION, 144 Berkeley St., Boston, Mass. New subscriptions received by the Cultivator.

An unintentionally erroneous statement was made in the article headed "A Successful Implement House," on Page 425 of the issue of November 2nd. It referred to the establishment of the company by its founder in 1892. We are now informed that the magazine article from which we took the information was in error. It should have been 1899.

Agriculture

AGRICULTURAL STATISTICS.

Authentic agricultural statistics are worth money and they cost money. The California legislature has made many attempts to get such information and has never succeeded. For years the appropriations to the State Agricultural Society have been made on condition that the society should maintain a department for the collection and publication of agricultural statistics.

And regularly every year the money has been used and nothing which could be called a statistical department has ever been maintained, nor have any original or officially verified statistics of any value whatever been published by the society. Formerly the money was used to promote horse racing. Recently it has been devoted to general expense.

Then the legislature provided for "county statisticians," to be paid, if paid at all, from the county treasuries, and a considerable volume of boom stuff has been collected by these gentlemen, and in due course of time printed by the state. No one desiring accurate knowledge would ever think of referring to the publications of the society, although doubtless they usually contain a good deal that was once true.

At the recent session a law was passed, and has been approved by the governor, ordering the directors of the Agricultural Society to collect and publish the agricultural statistics of the state, the figures for each year to be published by January 31 of the new year, or as nearly thereafter as practicable. Five thousand dollars has been appropriated for the purpose.

Nothing worth while can be done for $5000, which must apparently pay for collection, compilation and printing. There is but one way to collect agricultural statistics of any value, and that is to install a permanent and competent trained statistician, who is also a good executive man, and give him the money to work with. Starting with the figures of the census now being published, the work could probably be kept up in pretty good shape for from $20,000 to $25,000 a year, including cost of printing.

Anything short of that, or any plan which does not mean the appointment of a permanent, non-political, well-trained and experienced statistician at the head of the service means just so much money thrown away.

Statistical tables are of little value unless properly grouped and interpreted, with such comment as may be helpful. The value of such statistics depends not merely on the completeness and accuracy of the figures, although that is what costs most money, but on the manner in which they are handled for publication.

The total appropriation by the state in aid of the current expenses of the State Agricultural Society would just about pay for a statistical service.—Mr. Adams in the S. F. Chronicle.

Navy beans will mature in about eleven weeks. Late planting keeps out the weevil and gives ample time to work the crop. Rows should be laid off about 30 to 36 inches apart, and the hills should be about 10 inches apart.

The grape is one of the longest-lived of fruit plants. It will live and bear fruit for over a hundred years.

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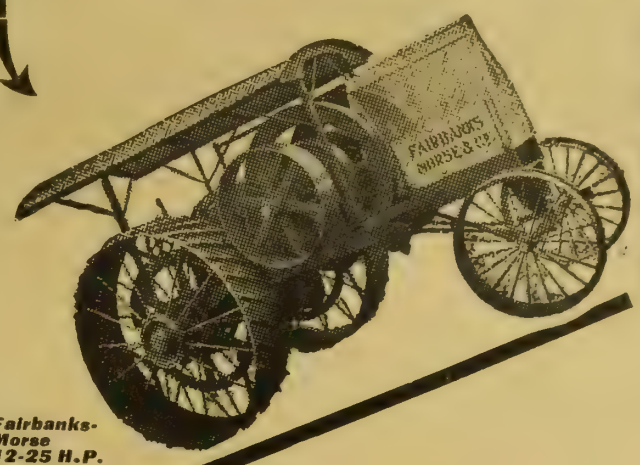

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A recent customer who bought one of these engines writes us as follows:

"On account of the rolling condition of my land, I had serious doubts of your Traction Engine fulfilling your guarantee, and my anxiety prompted me to make an immediate test. It was my intention to first try it upon pulling a hay baler, which weighs approximately four tons, and the engine was attached to this. With no difficulty the engine pulled the load, without loss of speed, up grades of at least 10 per cent.

"The next trial of importance was to get the Tractor up a hill where grades of 25 to 27 per cent were encountered. It was here that I received my greatest surprise. You know I had a 20 H. P. Fairbanks-Morse Portable Engine, and this required twelve horses to pull it up these same grades. Your Traction Engine went up without any difficulty, which was more than sufficient to satisfy me that your guarantee had been fulfilled. The trial lasted six hours; up hill, down hill, over rocks and boulders—just about as rough a country as could be imagined—it went without trouble or worry."

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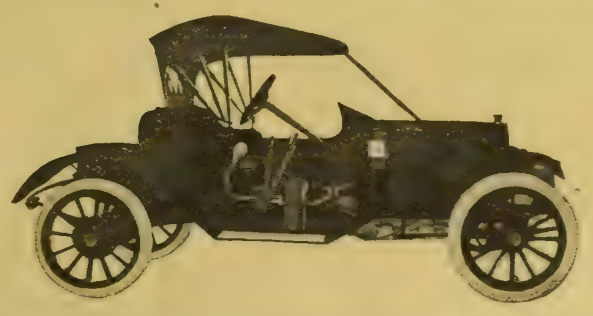

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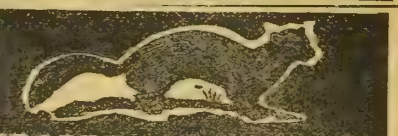

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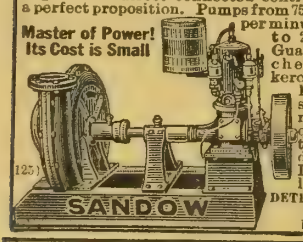

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High Grade Stock of Best Strains.
Young Stock for Sale.
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Fresno raisin packers are embarrassed by shortage of labor.

DYNAMITE IN FARMING.

Dynamite, still the terror of the uninitiated, and supposed by them to be useful only in the frightful havoc of war, or else in big blasting operations under the management of experts, is at last finding its greatest purpose in the humble arts of peace. The American farmer has discovered that, instead of being the awful menace to life and limb, and good for nothing but to wreak useless destruction, it has a most wholesome service in blowing out the stumps and boulders that burden his land, as well as digging his ditches for irrigation, draining swamps and transforming these wastes into the most productive soil in his property, and actually plowing his ground and cultivating his orchards. If there is any other condition on a farm where labor alone seems to be the only means of surmounting it, it is pretty certain that before long some ingenious student of the values of explosives will discover that dynamite will do it far better and more cheaply than under old methods.

Yes, dynamite does all these things, and furthermore it brings under control of the farmer land that he couldn't possibly reclaim otherwise. For instance, the swamp land on the average farm cannot be drained by ordinary methods except at the almost prohibitive cost of constructing elaborate ditches and drainage systems, and even this is not practicable unless there is a natural descent to carry off the water. Even afterward, the land is often so full of brush and trees that there is further great expense before it is finally ready for cultivation.

But along comes the man that knows how, sticks a few innocent looking dynamite cartridges into auger holes below the water, blows the everlasting stuffing out of the hardpan on which the water floats, and, behold! the water sinks out of sight, and the land is ready for clearing. Or else, if this is not sufficient, he plants his cartridges in a row running away from the swamp, touches them off, and he has a ditch that will accommodate a good-sized creek. And in all this the farmer had probably been to less than one-fourth the expense of drainage by ordinary methods and with incalculably less labor. Indeed, such development is not likely to cost more than five dollars an acre, unless there are unusual conditions.

All this makes easily possible the reclamation of the seventy million acres of swamp land in the United States, which has soil of amazing fertility, once it is exposed to the warm influence of the sun.

One Kansas farmer blasted a row of holes across the lower part of a forty-acre swamp on his farm, even where the water was three feet deep, which drained it at once, and the first year he raised forty bushels of oats to the acre, and since then has been harvesting four crops of alfalfa a year.

The same methods are employed in the digging of irrigation ditches; a very costly proceeding with men and teams, but vastly cheaper with dynamite. And the latter has the added advantage of taking care of everything in its path, whether rocks, trees, or hardpan.

One of the hardest problems that have confronted agricultural students in the last few years has been what could be done with the great areas of logged off land, so full of stumps as to make cultivation impossible, and seemingly of no more value than poor grazing ground for sheep.

Dynamite, however, is solving this problem; for it will tear out the stumps and shatter them into firewood, without any other labor than is required to bore a few holes in the wood, and all at one-eighth the cost of man and team labor. This was shown in experiments made by the Long Island railroad, which removed a hundred stumps for sixteen cents apiece, which would have required three men thirty-three days, or an average cost to the stump of over a dollar and thirty cents. The dynamiter and one helper blew out one hundred and fifty stumps in a day.

Even the Douglas fir stumps in the far Northwest, about the toughest of ordinary commercial woods, of over four feet in diameter, have been blasted out at a cost of a dollar and fifteen cents apiece. Instances are shown where land worth twenty dollars an acre was cleared of its stumps for twenty-five dollars and then sold for one hundred dollars an acre.

Indeed, loggers are now using dynamite to a considerable extent in felling timber; particularly in the cypress tracts of the South, where the water prevents choppers from getting at the trees. Other lumbermen say this method is much cheaper in all ordinary cases, and preferable, now that intelligent insertion of the dynamite cartridges into the base of the tree enables them to make it fall in any direction desired. The blast lifts the entire tree a foot or two above ground.

Farmers are also getting rid of huge boulders in their fields by shattering them with dynamite, and then carrying off the pieces. A boulder weighing ten tons can be removed with a single pound of the explosive.

One of the rather curious effects of using dynamite to make the holes for planting fruit trees is that these trees bear far more quickly and prolifically than those put into holes dug with shovels. One fruit grower planted three peach trees in blasted holes and six in the customary manner. Three years later the first three produced six bushels of fine fruit; but the other six were practically dead, owing to the dry weather. The dynamite had loosened the soil for a considerable radius round the hole, which permitted the tender young roots to expand at will into fertile, damp soil far below the surface. Since this has been learned, fruit growers are cultivating their orchards with dynamite, using just sufficient charge to stir the soil about the roots, with valuable results.

And so other farmers are actually plowing with dynamite, planting the sticks over their land near enough together to shatter the soil literally upside down to a depth of five feet or more, pulverizing the hardpan, or compact subsoil, with practically no disturbance of the surface, creating an increased water reservoir, making an easy path for roots to the plant food in the hitherto undisturbed subsoil, thus reclaiming land that had become worn out and practically worthless, so that banner crops followed. One watermelon grower in Georgia, whose crops had become so poor as to be almost unmarketable, read somewhere about exploding the soil, and spent ten dollars for enough dynamite cartridges to turn up an acre. His next crop was the best ever known in his locality.

Fortunate indeed would be the farmer that could reclaim his wornout land, by means of fertilizers and diversified planting, for no greater outlay than ten dollars an acre, and even then he would be leaving the subsoil as dormant as before.

Subsoil blasting increases the fertility of the soil, because the blasts aerate it and open up rich storehouses of natural fertilizer located below the depth to which the plow reaches. A field whose top soil has been worked out will take on new life when the underlying plant food is made available.

And so, it seems, dynamite is blazing the way into a new era of farming.

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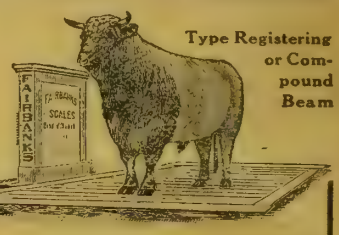

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Imperial Valley reports 35 bales of cotton ginned every day.

Veterinary

Answers in this column by Fred G. Matthews, M. S., D. V. M., 1232 Central Ave., Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Diarrhoea—Bloat.

A cow had diarrhoea, the discharge containing considerable blood. She was given creolin and improved. About two hours after a feed of bran and alfalfa meal with a handful of oat hay, she was found to be bloated and a neighbor stabbed her with a knife to let out the gas. This seemed to relieve her temporarily, but in a few hours she was swaying from side to side, went into spasms, and 17 hours after being stabbed, died. I opened her and found the last intestine inflamed. Now I have a calf with bloody diarrhoea. Is the disease contagious and what is the remedy?—Subscriber, San Marcos.

Your cow died from inflammation of the internal organs as a result of stabbing the rumen. A trocar should be used instead of a knife. There is a form of diarrhoea in cattle due to contagion, but I am inclined to the opinion that your cattle are getting some acrid plant in the pasture which irritates the bowel. Eliminate the irritant in the food, give a pound of epsom salts dissolved in water as a drench and follow with one tablespoonful of powdered ginger and a level teaspoonful of copperas mixed in ground feed three times a day.—F. G. M.

Cough—Tuberculin Test.

I have a cow which seems in great distress from a cough. She is running down but there is no discharge of any kind. There is a lump under the jaw which, I am told, is caused by barley beards. I blistered the lump, but it does not grow smaller or larger. Could the lump be lanced and whom could I apply to to have this properly done? Is there a test to determine whether she may be tuberculous?—Subscriber, Inglewood.

The cough, loss of flesh and lump under the jaw, combined are symptoms justifying the suspicion of tuberculosis, or other infection. Instead of expectorating, cattle swallow the matter coughed up from the lungs. Employ a veterinarian and let him decide whether to resort to surgery or the tuberculosis test. Get a veterinarian from the city of Los Angeles, if your city has no properly qualified practitioner of veterinary science.—F. G. M.

Shying in Harness.

My horse purchased about five years ago, at the age then of about five years, has the habit of shying at every little thing which happens to be on the roadside, sometimes turning so suddenly as to upset the phaeton. Being an aged woman, 84 years old, and not strong, I am unable to control him when he becomes frightened. We think it is his eyes though they appear to be perfect.—Mrs. A. C. F., Calistoga.

I am of the opinion the horse's eyes are not at fault. The horse is doubtless well fed and not worked sufficiently to overcome his high spirits. Horses disposed to shy a little, at first, and encountering weak restraint may develop the habit of turning abruptly. Considering the age of the horse it is doubtful if the habit can be corrected. However, you could try a more severe bit, subject him to heavy work to overcome his high spirits or employ a driver who is strong enough to manage him at all times.—F. G. M.

Don't pity the busy man. He's happy. The man nursing a soft snap is the one who needs real sympathy—though he may not deserve it.

Queries

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper, and sign full name and address. Unsigned communications receive no attention.

Pheasants.

Where can I secure settings of English Golden or Silver Pheasants eggs; also book on pheasant culture? Is there demand for the pheasants in this state?—Subscriber, Laton.

We are unable to give any information as to where pheasant eggs may be secured. The Department of Agriculture issues in Farmers' Bulletin 390, "Pheasant Rearing in the United States," with chapter on diseases of pheasants. We presume this may be had by writing the Department of Agriculture at Washington. There is also a book on "Pheasants, Their Natural History and Practical Management," by Tegetmeier, which any book dealer can probably secure for you.

Since writing the above we have received from the Fish and Game Commission information that by securing permission from the commission pheasants may be kept, sold and even slaughtered. The statute on the question is:

"Every person who takes, kills, or destroys, or has in his possession, any swan, or any wild pheasants, or any bob-white quail, or any variety of imported quail or partridge, or wild turkey, is guilty of a misdemeanor, provided however, that a person may rear, propagate, and have in possession pheasants and the increase thereof reared in captivity, or pheasants imported from a foreign country, and such artificially propagated or imported pheasants may be killed, sold, or disposed of at any season of the year upon permission from the State Board of Fish and Game Commissioners; and provided, further, that a copy of such permit shall be attached to any pheasants or the package containing the same, in plain view, when the same shall be sold or disposed of as hereinabove provided."

The Commission also writes that it is breeding and distributing Chinese or ring-necked pheasants at the rate of $5.00 per pair and $3.00 for each additional hen. Applications have been made to the commission in excess of the present supply so that one would have to file his application and wait his turn.

Curing Walnuts.

Have just secured a walnut orchard and would like to know how to cure nuts and prepare them for the market. —Subscriber, Sespe.

About the only preparation walnuts require for the market is removal of hulls, sorting out of stick-tights and defective nuts and drying a few days in the trays usually built for this purpose, bleaching in the chloride of lime solution, as given in the Cultivator of Oct. 26, Page 405, and sacking.

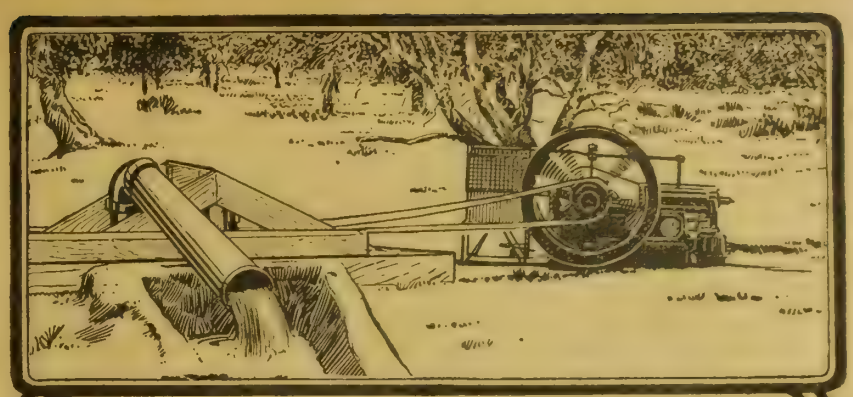
Potash on Prunes.

What is the best time of the year to apply potash to the ground in a young prune orchard? What quantity should be applied?—Subscriber, Campbell.

The best time of the year would be midsummer. Potash is usually considered good for perfecting and sweetening fruit and required for the ripening of wood. Applied at this time of the year there might be danger of its leaching away by winter rains before the roots were in condition to take it up.

Foxtail.

I send specimen of grass. What is



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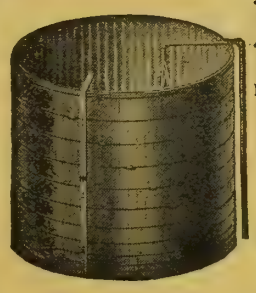

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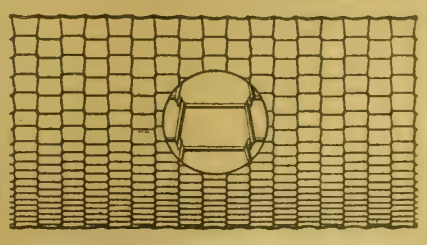

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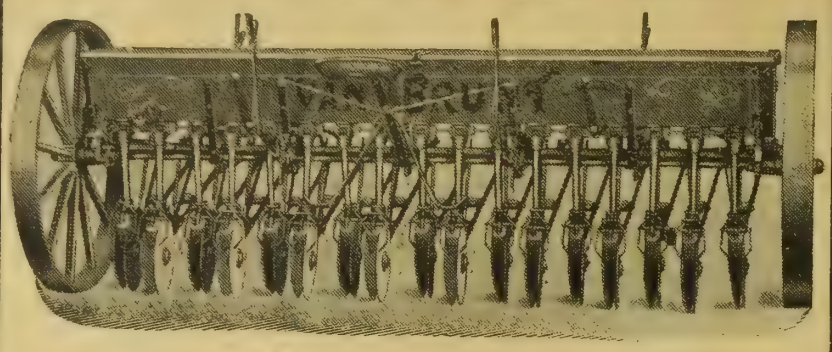

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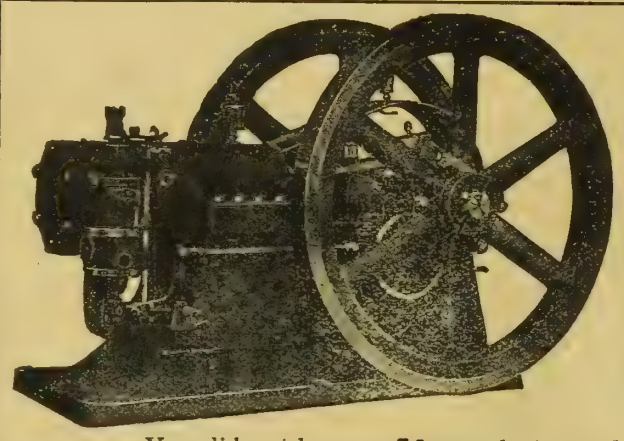

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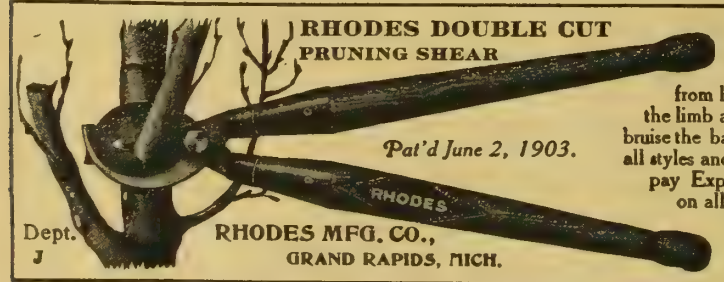

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Petaluma Cal

it and has it been cultivated?—Subscriber, Turkey, Arizona.

This was referred to a botanist who names it Chaetochloa compositae, a grass found in Texas, Arizona and Mexico. It is sometimes called Foxtail, and is of the same family as the Italian millet. It is native on dry ground, but where irrigated becomes rather luxuriant. It is not likely to become a pest.

Roadside Trees.

At what point along a highway should roadside trees be planted? I have trees growing on the line between ranch and highway. Can they be cut down to work the road?—Subscriber.

So far as the state law is concerned trees may be cut, and surely if in the way of highway improvement there should be no question about it. As to distance from the property line the state law has but little to say. The Los Angeles County engineer has prescribed for that county that for 40 foot streets all trees shall be six feet from the line; for 50 foot streets, eight feet; for 60 foot streets, ten feet; for 70 or 80 foot streets, twelve feet; and for 100 foot streets, fifteen feet. We believe there is one clause in the state law which prescribes that for a road three rods in width trees must be not more than six feet from the line. This is so objectionable that it should be repealed. The same law also stipulates that the trees shall be at least 20 feet apart.

Aliens Owning Land.

Can Japanese or Chinese become landholders or citizens?—Subscriber, Long Beach.

We believe any alien may own land in California. Asiatics are not permited to become citizens, but children of Asiatic parents born in this country become citizens at 21 years of age.

Lizards.

Are lizards harmful or useful, and should we kill them?—Subscriber, Long Beach.

As lizards live upon insect life they are generally considered friends of the planter. We have never heard of their doing any harm and have always supposed they were protected.

Lime on Gravel Loam.

Is water slaked lime beneficial to gravelly loam soil in orange orchard? If so, when should it be applied?—Subscriber, Orange.

We would prefer thoroughly air-slaked lime for applying to all land, but the greatest care must be exercised in applying to gravelly loam. On heavy clay land lime is almost sure to be beneficial, but on a loam, especially in California where soils are usually well supplied with lime, it is generally considered unnecessary, if not unwise. Some believers in abundance of lime neutralizing excess of magnesium in the soil have applied lime liberally, but it must be borne in mind that excess of lime means rapid loss of humus.

Preserving Fence Posts.

Please advise as to preparation for preserving fence posts. Some are green and some dry willow.—Subscriber, Fresno.

Doubtless the best preservative is creosote or carbolineum applied while hot. It will work best on the seasoned posts. Willow treated by this process will last much longer than if put into the ground untreated. The usual method is to heat in a vat deep enough to dip the posts to some two or three inches above where they will be set into the ground. By the "brush treatment" two or three coats of the preservative are applied with ordinary paint brush. With this treatment it has been stated that a penetration of two or three annual rings, ranging from a sixteenth to a quarter of an inch has been secured. Forest Service Circular No. 117 gives extended description of the treatment. When buying creosote get as heavy as can be obtained. If applied very hot the penetration is greater and results better. We presume there is no danger of heating creasote too hot, but we note the above mentioned circular says: "Never heat creosote above 250 degrees. Just above the boiling point of water is considered best." Never brush treated posts when the air or the post is very cold. Have the post as dry as possible before brushing.

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THE GIRL WHO SMILES.

The wind was east and the chimney smoked,
And the old brown house seemed dreary,
For nobody smiled and nobody joked,
The young folks grumbled, the old folks croaked,
They had come home chilled and weary.

They opened the door, and a girl came in:
Oh, she was homely—very;
Her nose was pug, and her cheek was thin,
There wasn't a dimple from brow to chin,
But her smile was bright and cheery.

She spoke not a word of the cold or damp,
Nor yet of the gloom about her,
But she mended the fire and lighted the lamp,
And she put on the place a different stamp
From that it had without her.

They forgot the house was a dull old place,
And smoky from base to rafter,
And the gloom departed from every face
As they felt the charm of her mirthful grace
And the cheer of her happy laughter.

Oh, give em the girl that will smile and sing,
And make all glad together!
To be plain or fair is a lesser thing,
But a kind, unselfish heart can bring
Good cheer in the darkest weather.

—McCall's Magazine.

A PLANNED AFFAIR.

"He's a very nice fellow," I heard my mother say, "and I am sure Esther would make him a good wife."

"I quite agree with you," my father replied.

I gasped and clung to the balcony balustrade, to prevent myself from falling, so surprised was I. They are actually arranging a marriage for me.

Of all the preposterous things I had ever heard, there was nothing to equal this.

Then I resolved to go in and demand to know the name of this "very nice fellow"—ugh! I hated him already. So I stepped into the room.

"I overheard what you were saying about me," I began, "and I don't think it is at all nice——"

"One moment, Esther," my father broke in; "let us have an understanding on the subject. We were going to speak to you this evening about Sir Richard."

Oh! So it was Sir Richard Lancaster. I had never seen him, although I had often heard his praises sung. How I do detest those people whom everyone praises!

"It is Lady Lancaster's wish, and our own, that you and Sir Richard should become engaged," my father resumed. "Of course, if either of you found the other distasteful——" He paused and shrugged his shoulders.

So there was a loophole. Already Sir Richard was distasteful to me.

"Lady Lancaster wants you to go and stay at Lancaster House," began my mother, taking up the attack. "You and Sir Richard will then be able to see each other a great deal."

I returned to my room after having entered into a sort of capitulation. In other words—I am not quite sure of the previous sentence—I agreed to go to Lancaster House for an indefinite period. There was a house party being held there, so I could manage to enjoy myself, at any rate.

The awkward part of it all was that no one knew of Jack Malcolm. We had met at several garden parties, and I liked him awfully. He asked me to marry him last time we met, but I wasn't quite sure and told him to wait. Well, about ten days later I traveled up to London, stayed the night with my aunt, and left King's Cross on the following morning.

Lancaster House is beautifully situated in the heart of a breezy Yorkshire moor, and but for the wretched nightmare of Sir Richard I felt I could have a lovely time.

When I got out at the little country station there was an awfully smart dog-cart drawn up by the platform.

"Are you from Lancaster House?" I asked the man in charge.

"Yes," he replied.

Presently we were bowling along the quiet country road that stretched across the moor. Then we passed through some wooded country, and presently, through a belt of trees, I saw an old grey house.

"Is that Lancaster House?" I asked. "Yes, miss," the driver replied.

"Can I get there by that path?" I queried, pointing to a sweet little path that went zigzagging up towards the house.

"That leads to Lancaster House."

"Then I'll get down and walk," I said.

"I don't think mother would like that," he said.

"Mother!" I cried, in wonder. "Who are you?"

"My name is Lancaster," he replied, somewhat meekly.

"I presume I am speaking to Sir Richard Lancaster?" I said, in very stiff tones.

"At your service," he replied.

"You might have told me who you were," I went on, in high dudgeon.

He laughed lightly and showed two rows of exquisite teeth. I had never noticed how good teeth become a man until then.

"You took me for the coachman," he said, and now I noticed how musical his voice was. "I didn't like to undeceive you at once."

We bowled along in silence for about a mile.

"Here we are, Miss Douglas," suddenly came Sir Richard's voice, and at that moment we passed through some lodge gates and swung up the drive.

Presently Lady Lancaster had welcomed me, and I was seated in a duck of a bedroom, all picked out in pale green, gold and white.

The days quickly slipped by, tennis, boating, driving, croquet, and a host of other enjoyments adding to their speed.

Strangely enough, I had not heard a word concerning the possible engagement, except from Lady Lancaster on the morning after my arrival.

The time slipped by rapidly, and never another word about the—I don't know what to call it. I believe X represents the unknown quantity in algebra, so I'll call the "arrangement" X. I began to wonder whether Sir Richard had forgotten X. It worried me and preyed on my mind. At last I resolved to bring matters to a head and make Sir Richard give me his views.

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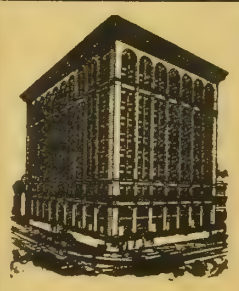

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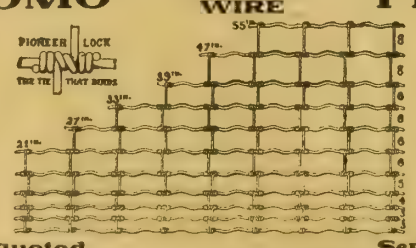

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The opportunity came one evening as we were coming back from a picnic up the river. Sir Richard and I had somehow got a skiff to ourselves.

"Er—Sir Richard," I began, and paused.

"Yes," he replied helpfully.

"You know why—er—why I came here?"

"Oh, yes!" was his reply.

"Well, what do you think of it all?" I asked helplessly, unconsciously repeating the words of a great statesman.

"Rather queer, isn't it?" he asked.

"The fact is," I floundered on, now helplessly out of my depth and not caring a scrap what I said, "the fact is, I have a friend, Mr. Malcolm.

"Not Jack Malcolm?" asked Sir Richard, with suddenly awakened interest.

"Yes, his name is Jack. Do you know him?"

"I knew a Jack Malcolm at Balliol. I wonder if it is the same?"

"Jack was at Balliol," I replied.

"Then it must be the man I know."

"Do your people know anything about it?" Sir Richard asked at length.

"Not a word," I answered dolefully.

He laughed outright.

"Good! We're in the same boat."

"Really?" I cried joyously. "Then what our parents want is——"

I paused for lack of suitable words.

"Your people don't know about this Miss——"

"Trevor," he said. "No, not a word."

"Well, then," I cried excitedly, "why not invite them both here? You could manage it all right."

"I've a great mind to do as you suggest," he remarked, thoughtfully.

Then I exerted all my persuasive powers, and ere we landed I had got Sir Richard to promise to invite Jack Malcolm and Miss Trevor.

Luckily, they were both able to come, and before the week was out they were members of the house party.

I was awfully glad to meet Jack again, but I told him at an early opportunity that I had not made up my mind yet. He laughed and said he could afford to wait.

I was very interested in Miss Trevor, but could not make up my mind whether I liked her or not. She was very pretty and seemed fond of Sir Richard.

Soon the time for my departure drew near, and with it there came a decided disinclination to leave Lancaster House. I had never enjoyed myself so much before. Sir Richard was a charming host and was ever so thoughtful—I had merely to express a wish and it was granted.

Presently, however, I began to notice undry little idiosyncracies in connection with Violet Trevor that made me think she was not good enough for Sir Richard.

She was an awfully nice girl, of course, but Sir Richard was miles too good for her. Then another thing occurred which helped to stir up the tranquillity which I had experienced since the arrival of the two new guests.

What I mean is that Jack began to grow somewhat sulky and reserved. He had not spoken to me about getting married since the first week, and I felt that he was offended.

To tell the truth, I did not want to become engaged to Jack yet.

Then came the climax. Jack said he wanted to speak to me in private. I felt what was coming and nerved myself. I wondered what I was to say—I must try and put him off a little while longer.

"Er—Esther," he began nervously.

"Yes," I replied demurely.

"You know I've often asked you to marry me?"

"On several occasions, you have," was my answer. Now it was coming. I hoped he would not be too passionate.

"Well, your uncertainty has led me to think that we cannot be suited to one another," he went on slowly, "so it will be better not to have any understanding between us."

I gasped. This was a contingency I had never dreamed of.

"The fact is," he continued, "your continual refusals, and particularly the last one, have caused me to think very differently."

"Indeed?" I said calmly.

"Yes, and—er—Miss Trevor is going to marry me," he suddenly blurted out.

"Oh!" The ejaculation forced itself between my lips. Had a bombshell exploded at my feet I could not have been more surprised. At the same time I did not feel any pain, but a strong sympathetic feeling for Sir Richard rose up within me.

Poor Sir Richard what would he do now? But still it was better as it was, for Violet was not good enough for him by a long way, I believe I said that before.

"You'll shake hands, won't you?" Jack said uncertainly.

"Rather!" I cried, and we shook vigorously, our hands, I mean.

"You don't seem to mind very much," he said.

"I expect that will come later," I murmured.

Presently he hurried back to Violet, and I wandered on, feeling so sad about poor Sir Richard. It made my heart quite ache.

"Hallo! Day-dreaming?" suddenly came the voice of the object of my thoughts. A bold idea came into my mind, I would break the news to him myself.

"Sir Richard," I began, in a low voice, "I have a piece of very bad news for you."

"Bad news?" he repeated, gazing at me in surprise.

"Yes, about Miss Trevor."

"Why, what do you mean?"

"Er—Miss Trevor and Mr. Malcolm have——"

"Fixed it up?" he queried.

"That's it," I replied.

"Poor little girl," he said, taking my hand. "I was afraid it was coming. I've noticed it for several days. And you thought about me, whilst you yourself are suffering?"

"Me suffering?" I asked.

"Yes, you and Mr. Malcolm were—" Now it was his turn to pause.

"Oh, I don't mind that in the least," I replied. "I was thinking of you and Miss Trevor."

"Pooh! I didn't care like that, you know; I used to think I did."

"H'm!" I remarked. It was all I could say under the circumstances.

"I say," he went on hurriedly, taking hold of my other hand, "we both seem to have been shunted; can't we —well, you know——"

Somehow or other I did know then, although I had never known before, so I just hung my head, and it rested on his shoulder.—Exchange.

"You wants to be mighty cyahful in dis life," said Uncle Eben, "'bout what you says. You kin git into trouble enough through what people say you said, wifout contributin' nuffin on yoh own account."

VERANDA REFLECTIONS.

How many homes have music in them?

You can trade money for a lot of things.

Corn on the cob is worth two on the toe.

Girls should always make friends of their mothers.

Are you in any way in partnership with your boy?

Did you ever regret any kind word you ever spoke?

Some men ought to have as much backbone as they have wishbone.

Every purchaser plays a safer game when buying of the man who advertises.

Have you got a good title for your farm? If not, the sooner it is clear the less it will cost.

Every town should furnish some sort of rest room for ladies who come from the country.

Do you have as much patience with your postmaster and telephone central as they have with you?

Should town officials furnish, free of charge, water troughs at which farmers can let their horses drink?

How many grandpas and grandmas treat their grandchildren better than their children? Answer: All of 'em.

When the old cow kicks the bucket of milk over, do you say the same thing that you would say if your preacher were present?

The man who didn't go to the election is often the worst kicker.

Should public officers grant to some citizens favors which they refuse to others?—Ohio Department of Agriculture.

SWISS STEAK.

A favorite old-fashioned method of making a tough piece of steak tender was to pound it. As there was bound to be some loss of juices in this process some thrifty person thought of a way to avoid this loss. It was to pound flour into the meat to catch or take up the juices.

The following, called "farmer stew," is a government recipe for steak so prepared: Pound flour into both sides of a round steak, using as much as the meat will take up. This may be done with a meat pounder or with the edge of a heavy plate. Fry in drippings, butter or other fat, in a Scotch bowl, or if more convenient in an ordinary iron kettle or a frying pan; then add water enough to cover it. Cover the dish tightly so that the steam cannot escape and allow the meat to simmer for two hours or until it is tender. One advantage of this is that the steam cannot escape until the meat is done, as the gravy is already thickened. However, if a large amount of fat is used in the frying, the gravy may not be thick enough and must be blended with flour.—Ex.

IF YOU HAVE NO ICE.

The July Woman's Home Companion contains a great variety of practical housekeeping suggestions. Here is one for the housekeeper who gets along without ice:

"Obtain a large, common flower-pot and seal the hole in the bottom with plaster of Paris. Place in the pot the bottle containing milk, or a covered crock containing butter, and fill the pot with water to as great a depth as possible without the bottle or crock floating. Cover the pot with a board or a plate and set out in the open air, away from the direct sunlight, and preferably where there is a current of air. The exaporation of the water from the surface of the porous pot will keep the contents several degrees colder than the outside air, when there is the slightest amount of air stirring. The higher the wind, or the drier the air, the greater will be the cooling effect."

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To the Man Who Owns a Horse, a Cow, a Sheep, or Hog;

To the Woman who Owns Poultry:

Willsden's Anatomical Chart will be found more valuable than any single book or publication that can be secured anywhere, at any price.

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There are also five similar plates each for the COW, SHEEP, HOG, and CHICKEN, all carefully drawn and engraved, and in correct coloring. In connection with these plates are carefully written articles by eminent stockmen and veterinarians, describing the chart in detail. For instance, the write-up on cattle gives an explanation of each of the five plates, then gives some valuable suggestions regarding general care and management, shelter, and feed, as well as describing their common ailments with symptoms and treatment. While this chart may not displace the veterinary surgeon, a thorough understanding of the information it contains will save thousands of dollars' worth of livestock and poultry each year which have been lost heretofore BECAUSE THE OWNER DID NOT KNOW AND HAD NO WAY OF FINDING OUT JUST WHAT TO DO AT THE RIGHT TIME.

The HON. F. D. COBURN, who is considered authority, in his book "Swine in America," gives several secret remedies. The LIVESTOCK ANATOMICAL CHART GIVES THESE SAME REMEDIES, AND THAT ON HOG CHOLERA CURE IS ALONE WORTH HUNDREDS OF DOLLARS TO ANYONE WHO RAISES HOGS.

The publisher of the SHEPHERD JOURNAL gives in this chart many valuable treatments of diseases of the sheep.

DR. J. W. THOMPSON, editor of THE SPIRIT OF THE WEST, gives a world of information on care and treatment of diseases of the horse.

REESE V. HICKS, editor of POULTRY CULTURE, takes up the subject of poultry, and also gives the best known method of preserving eggs; it is simple—yet has been recommended by the Governments of the United States, Great Britain and Germany.

This Chart Also Contains

Latest map of California and Nevada.
Map of the United States.
Map of the World.
Complete list of California cities and towns with 1910 census.
Portraits of all California governors, from first to last.
Pictures, maps and data concerning Panama Canal.
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During all my studies and experience I have never come across a chart so complete in every detail as the Willsden' Livestock Anatomical Chart. Every farmer and live-stock raiser should have one.

C. H. Stange, Iowa State College, Ames, Ia., says:
In my estimation the Livestock Anatomical Chart should be used in office or home of every livestock raiser.

John M. True, Secretary Board of Agriculture, Madison, Wis., says:
The Livestock Anatomical Chart contains much useful information for the stockman and farmer, and is arranged in a manner both available and practical.

Dr. O. O. Wolf, President Kansas Med. Vet. Assn., says:
Through the Livestock Anatomical Chart the practical knowledge in the care and treatment of livestock may be had through which thousands of dollars may be saved by livestock raisers and farmers everywhere.

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Herewith find $..... for which you will send me The Rural Californian two years and The Willsden's Unrivaled Live Stock Anatomical Chart with Atlas Features, etc.—all prepaid.

Signed.....

Route..... Postoffice.....

San Francisco-Los Angeles Produce Markets

Los Angeles Market

LOS ANGELES, Nov. 8, 1911.

Butter.

Extra butter declined one cent yesterday, though all other grades remain as last week, with rather more liberal receipts.

Prices to trade 2½c in advance of the following Produce Exchange quotations:

Extras	33½
Firsts	30
Ladies	25
Country	23

Cheese.

Local Anchor	16
Oregon Daisy	17@17½
Northern Fresh	16@17
Domestic Swiss	18
Imported Swiss	33

Eggs and Poultry.

A drop is also noted in eggs. This was made during the last days of last week. Easterns and storage are commanding ready sale.

Buying prices f. o. b. Los Angeles are:

Local Ranch Candled	46
Case Count	42
Eastern	32@34
Eastern storage	25@26
Pullets	26

Dealers pay for live poultry f. o. b.:

Hens, lb	12@16
Roosters	8
Broilers	18
Fryers	12
Roasters	12
Turkeys	19@22
Ducks	13
Geese	12
Guinea hens, doz	4.00
Squabs, doz	1.75

Live Stock.

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs	7¼
Prime steers	6
Heifers	6
Calves, lb	6½
Sheep, ewes, head	4.75
Lambs, head	3.75@4.25
Wethers	5.00@5.60

Potatoes.

Wholesale prices are:

Sweets, yellow, cental	1.50@1.75
Highlands, cental	1.90@2.00
Salinas	2.00@2.10

Onions.

Wholesale quotations:

Australian Brown, cental	1.75
Silverskins, sack	1.75@1.85
Yellow Danvers, cental	1.75
White Wax	1.50@1.65
Garlic	5@6

Vegetables.

Wholesale quotations:

Artichokes, Northern, doz	90@1.10
Beets, doz bunches	35
Bell Peppers, lb	4@5
Brussels Sprouts, lb	8
Beans, Limas	4@5
Beans, Green and Wax	4@5
Green Chilis	3@5
Chilis, Red	15@16
Cucumbers, lugs	60@75
Cabbage, sack	65@75
Cabbage, Red, lb	3@3½
Cauliflower, doz	50@60
Celery, new, crate	1.50@1.75
Carrots, sack	90@1.00
Corn, lug	50@60
Egg Plant	3@5
Horseradish, lb	13½
Onions, Green, doz bunches	15@20
Kohl-rabi, doz bunches	40
Leeks, doz	35@40
Lettuce, crate	90@1.10
Mushrooms, lb	50@1.00
Oyster Plant, lb	15@20
Okra	6@8
Peas, lb	5@7
Parsnips, doz bunches	45
Parsley, doz bunches	25@30
Turnips, sack	90@1.00
Radishes, doz bunches	15@20
Rhubarb, Crimson Winter	90@1.00
Spinach, doz	15@20
Squash, Summer	50@60
Spearmint, doz	25@30
Tomatoes, lug	40@50
Turnips, sack	1.00@1.25
Watercress, doz	35@40

Citrus Fruits.

Valencias	4.00@4.50
Grapefruit	2.00@6.00
Lemons	4.00@4.50
Limes, hundred	1.25

Fresh Fruits.

Wholesale prices on the market are:

Alligator Pears	1.25@1.50
Apples, Bellefleurs	80@1.10
Apples, Spitzenbergs	1.10@1.50
Apples, Pearmains	1.25
Apples, Jonathans	1.90@2.35
Apples, Crab, lug	1.25
Bananas	4½
Casabas, crate	1.50@1.75
Cantaloupes, standard	1.25@1.50
Figs, box	75@1.25
Grapes, Thompson Seedless, lb	3
Grapes, Black Hamburg, lug	65
Grapes, Muscats	75@90
Grapes, Tokays	85@1.00
Grapes, Cornichon	1.10
Loganberries	6@8
Peaches, lug	1.50@1.75
Pineapples	8@10
Quinces, lug	80@1.00
Persimmons	1.00@1.25
Pomegranates, lug	75@1.25
Plums, Clymans, lug	1.50
Plums, Tragedy	1.50
Pears, Bartlett, box	1.25
Blackberries	8@9
Raspberries	10@12
Strawberries	5@10
Watermelons, lb	¾@1

Dried Fruits.

Wholesale prices to retailers are:

Evaporated Apples, fancy, lb	11@11½
Apricots	16@17
Figs, box	1.50@1.75
Peaches	11@12½
Nectarines	12
Pears	12@13
Prunes	7½@15
Plums	10

Beans, Dried.

Wholesale quotations:

Limas	5.50@5.75
Black Eyes	4.50@5.00
Pinks	4.00@4.10
Lady Washington	4.50@4.75
Small White	4.50@4.75
Garvanzas	4.50
Bayous	4.50@5.00
Lentils	6.00@7.00
Mexican Reds	4.75@5.00

Nuts.

Wholesale quotations:

No. 1 Soft Shell Walnuts	15@16
No. 1 Hard Shell Walnuts	13½
No. 2 Walnuts	11
Almonds, IXL, lb	19@20
Pecans, polished	15@17
Pecans, Eastern	8
Peanuts, California	6
Pine Nuts	18

Honey.

Wholesale quotations:

Extracted Water White	8½
Extracted Light Amber	7½
Comb Water White	16@17
Light Amber	13@14
Beeswax	30

Hay.

Buying prices f. o. b. cars Los Angeles:

Barley Hay	13.00@14.00
Wheat Hay	13.00@14.00
Tame Oats	15.00@17.00
Alfalfa	13.50@14.50

Grain.

Wholesale selling price f. o. b. Los Angeles:

Wheat, new, cental	1.75@1.80
Corn	1.70@1.95
Kaffir Corn	1.80
Millet	3.75
Popcorn	4.75@5.00
Egyptian Corn	1.80
Red Oats	2.00
Seed Barley	1.50
Milo	1.95

Feed Stuff.

Wholesale selling price f. o. b. Los Angeles:

Alfalfa Meal	1.15
Beef Scrap	3.00
Bone Meal	2.05
Charcoal	1.95
Cracked Corn	2.00
Cracked Wheat	1.90
Shorts	1.85
Bran	1.70
Oil Cake Meal	2.60
Feed Meal	2.05
Rolled Barley	2.10
Rolled Oats	2.00
Middlings	1.85

Do your cows milk hard? Send 50 cents for teat expander. O. J. Weber Co., 225-227-229-231 East Sixth St., Los Angeles, Cal.

Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 225-227-229-231 East Sixth Street, Los Angeles.

San Francisco Market

SAN FRANCISCO, Nov. 7, 1911.

Butter.

A couple of points are dropped off of extras—one last week and one on Monday. Market firm at present quotations.

Prices to trade 2½c in advance of the following Produce Exchange quotations:

California Extras, lb	32
Prime Firsts	31
Firsts	28
Seconds	24

Cheese.

California Flats	13@15½
Cal. Young America, fy, new	15@15½
Oregon, fancy	14½

Eggs and Poultry.

Extras stand as last week, and "pullets" dropped off a half cent during the week. Market firm at this writing.

Official quotations of the San Francisco Wholesale Dairy and Produce Exchange are:

Fresh Ranch Extras	52
Firsts	45
Seconds	28
Select Pullets	41½
Storage Extras	27
Hens	4.00@9.00
Fryers, doz	5.00@6.00
Ducks	4.00@7.00
Broilers	3.00@4.50
Roosters, doz	4.00@9.00
Geese	2.00@2.50
Goslings, pair	2.00@2.25
Pigeons	1.50@2.00
Turkeys	22@24
Squabs	2.00@3.00

Live Stock.

San Francisco prices, gross weight:

Steers	4@5¾
Cows and Heifers	3@4¾
Calves, lb	5½@6¾
Hogs	6½@6¾
Wethers, No. 1	3¾@4
Lambs	4½@5
Ewes, No. 1	3¼@3½

Potatoes.

Wholesale market quotations:

River Whites, cental	1.00@1.25
Alamedas	1.00@1.50
Sweets, cental	1.60@1.75

Onions.

Yellow, new	1.00@1.15
Garlic, new, lb	3@4

Vegetables.

Wholesale quotations:

Asparagus, box	1.00@1.75
Beans, String	2@3½
Beans, Wax	2½@4
Limas	2@3
Bell Peppers, box	75@1.00
Cabbage, cental	75@85
Cauliflower, doz	50@60
Carrots	50@80
Cucumbers, box	65@1.00
Corn, sack	50@1.25
Chile, box	35@75
Celery, crate	1.50@2.50
Egg Plant, box	35@60
Lettuce, crate	75@2.00
Okra, box	50@85
Peas, sack	1.75@2.00
Hubbard Squash, sack	50@75
Summer Squash, lug	65@1.00
Squash, Marrowfat	50@65
Tomatoes, box	15@40
Turnips	60@75

Citrus Fruits.

Valencias	3.25@4.50
Grapefruit	3.00@4.50
Lemons	2.00@6.00
Limes, Mexican	4.50@5.00

Fresh Fruits.

Apples, Bellefleurs	75@1.00
Apples, Newtons	1.00@1.25
Apples, Spitzenberg	1.10@1.35
Cantaloupes, standard	40@1.40
Nutmegs, large, crate	35@1.00
Figs, box	75@1.00
Grapes, Thomp. S., crate	1.50@1.75
Grapes, Black	50@60
Grapes, Muscat, lug	80@1.25
Grapes, Tokay	50@65
Pears, Bartlett, box	75@1.75
Peaches, box	40@1.25
Plums, box	40@60
Quinces, box	50@75
Blackberries, chest	5.00@6.00
Loganberries, chest	4.00@6.00
Raspberries, chest	5.00@7.00
Strawberries	2.25@5.00
Pineapples, Hawaiian	2.00@3.50
Bananas	1.00@1.50
Watermelons, doz	1.25@2.00

Dried Fruits.

FRUITS—1911 crop, f. o. b., carload lots, per lb: Apples, 8@9½c; Apricots, 14@17c; Peaches, 9¼@11c; Prunes, bulk basis, 6@7½c; per lb, 4¾@10c; Figs, 4¼@5½c for White; Pears, 9½@12½c.

RAISINS—1911 crop: Seeded, per pkg—Fancy, No. 16, 6½c; Choice, No. 16, 6¼c. Loose Muscatels, in 50 lb boxes—Standard, 4-crown, 5¾c; 3-crown, 5¼c; 2-crown, 4¾c; Seedless Muscatels, 5½c; Sultanas, 6@6¼c; Thompsons, 7@7½c.

Nuts.

Walnuts, No. 1 Soft Shell	14
Walnuts, No. 1 Hard Shell	13½
Almonds, N P U	16@16½
Almonds, Nonp	18@18¾
Pecans	14@17
Chestnuts, California	6@8
Peanuts	5@5½

Beans, Dried.

Limas	5.30@5.40
Pink	3.35@3.50
Black Eyes	3.80@4.00
Small White	4.05@4.10
Large White	4.00@4.05
Kidneys	5.00@5.15
Garbanzos	3.00@3.25
Bayou	3.65@3.85
Red Mexican	4.50@4.60
Horse Beans	2.75@3.00
Cranberry	3.40@4.00

Hops.

Hops, Coast, 1910	35@38
Hops, 1911	39@43
Hops, Oregon, 1911	39@43

Honey.

Water White, Comb, '11	15
Dark Comb	12½
Extracted White, '11	9@10
Extracted Dark	6½
Beeswax, lb	24@30

Hay.

Arrivals of hay on the San Francisco market for the week past have amounted to 3,150 tons. The bulk of this amount consisted of alfalfa. The market has been well sustained under the conditions that have prevailed here during the month of October, as that month is always a very dull month in the trade in San Francisco. Many of the large consumers put in somewhat of hay during the harvest and while the hay was coming out of the fields, and for that reason are not in the market to purchase during the month.

While the demand has been quiet, an undercurrent of strength is plainly evident, and as soon as there is a little better inquiry for hay it is the general opinion that a better condition of affairs may be expected at once. The export trade on hay has been decidedly moderate during the last week, although there is a little being shipped along the Coast right along, but the quantity has not been large enough to affect the market in any way.

Immense quantities of alfalfa hay have been brought in. The month has been most favorable for the alfalfa farmers along the rivers to harvest their late cuttings. Much of this hay has been baled and shipped in rapidly, and there is considerable more to come forward, providing the weather holds good. The demand for straw is not active, and the market on this article is a little quiet, in sympathy with the condition on hay.

At present much interest centers around the reports from the sections tributary to the San Francisco market on stocks of hay on hand Novem-

Cream Separators, all sizes and prices. O. J. Weber Co., 225-227-229-231 East Sixth Street, Los Angeles.

ber 1. These reports are now in process of being compiled, and the result is anxiously being awaited.

We quote the wholesale prices in round lots on today's market as follows, viz.:

Fancy Wheat Hay	19.00@20.00
No. 1 Wheat or Wh & Oat	16.00@17.50
No. 2 Wheat or Wh & Oat	13.00@14.00
Choice Tame	16.00@17.00
Other Tame Oat	10.00@14.00
Wild Oats	10.00@13.00
Stock Hay	5.50@6.00
Alfalfa	9.00@11.00
Straw, bale	60@70

Grain.

Wheat	1.47½@1.50
Barley, fancy	1.90
Barley, good to choice	1.85@1.87½
Barley, poor to fair	1.75@1.80
Corn	1.60@1.62
Oats, White	1.82½@1.87½
Rye	1.50@1.57½
Mustard, Brown	5½
Alfalfa Seed	18
Millet	2¾
Flaxseed	5@5½
Broom Corn Seed, ton	30.00

Feed Stuff.

Alfalfa Meal	15.00@17.00
Bran, ton	27.00@28.00
Feed Cornmeal, ton	38.00@39.00
Cracked Corn	38.00@39.00
Rolled Barley, ton	39.00@40.00
Rolled Oats, ton	36.00@37.00
Middlings	32.00@35.00
Oilcake Meal	42.00@43.50
Cocoanut Cake, ton	24.00@25.00
Mixed Feed, ton	25.00@27.00
Shorts	29.00@30.00

Deciduous Fruit Market

F. B. McKevitt, general manager of the California Fruit Distributors, reports:

Sacramento, Cal., Nov. 4, 1911.

The following gives number of cars of deciduous fruit shipped from all points of California for the week (7 days) ending Friday morning, Nov. 3, 1911:

Pears—5¼ cars. Limited shipments of the fall and winter varieties are still going forward and will not be completed for another week or ten days, but the volume will necessarily be very small.

Grapes—474½ cars. Shipment this week shows a falling off of nearly one hundred cars from the previous week. There will undoubtedly be an even greater decline during the next seven days. The Tokay movement is nearing its conclusion, but there will be full cars of this variety available in a somewhat limited way during the coming week. The principal volume of shipments will be Emperor and the last of the Cornichons. There is a liberal movement of the former variety from the Fresno district at the present time and the fruit is of the usual good quality to be expected from that section.

Comparative Statement of Shipments,

Nov 4	1910	1911
Cherries	250½	216¼
Apricots	289¾	214½
Peaches	2,517¾	2,027
Plums	1,552½	1,366
Pears	2,360	2,303
Grapes	4,492½	5,260½
Sundry	16	16
Total	11,479	11,405½

Citrus Fruit Market

LOS ANGELES, Nov. 8, 1911.

The few Valencias as yet on the road are being received favorably by the Eastern market, and the new crop Navels which are going, so far as can be determined this early, will command excellent returns. Only very few cars have been sold, and these at exceptionally long prices, but as shipments of the earlier fruit increase these prices will probably be reduced. Florida and island fruit is also being well received, and all is rather sweeter than ever heretofore. California's total shipments since November 1 are rather greater than last year, but a part of this is in Valencias which had not been cleaned up.

Lemons are still shading slightly, and prices are not quite as high as last year this date, but still satisfactory to growers. The most satisfactory feature, however, is the keen demand for Californias in preference to foreigns. Foreigns are not being received with the freedom of last year.

Shipments.

Total shipments since November 1: Oranges, 40 cars; lemons, 80 cars; total citrus fruits, 120 cars. To same date last season: Oranges, 27 cars; lemons, 67; total, 94.

The one day's shipments made after last week's report raise the total for the year 1910-1911 to oranges 36,821 cars, lemons 6,764; total of citrus fruits from Southern California, 43,585. Tulare's shipments remain same as given, 2,193 oranges, 105 lemons. Butte, 489 cars oranges. Grand total of all citrus fruits from the state, 46,372 cars. With local consumption not counted in the above, there is no question that the output will be in excess of the 50,000 carloads which was the preliminary estimate of a year ago.

BOSTON, Nov. 7.—Two cars sold. Clear and warm. Market is unchanged.

VALENCIAS.

Planet, S. S., McPherson	$4.30
Rey, S. T., Fernando	4.95
Urchin, S. T., Fernando	3.95
Searchlight, S. S., McPherson	3.65
Tunnel, S. T., Fernando	4.30

NEW YORK, Nov. 6.—Nine cars Valencias and one car lemons sold. The market is strong on oranges and lemons. Raining.

Valencias.

	Avge.
Old Mission, fy., Chapman	$7.00
Old Mission, ch., Chapman	5.80
Golden Eagle, sd., Chapman	4.60
Lady Rowena, Chapman	3.75
Windermere, Windermere ranch	4.20
Old Mission, fy., Chapman	6.95
Old Mission, ch., Chapman	5.75
Golden Eagle, sd., Chapman	4.65
Lady Rowena, Chapman	3.85
Tustin Gem, Tustin P. Co.	4.15
Old Oak, ch., Tustin P. Co.	3.70
Premium, Benchley Ft. Co.	5.15
Superior, Benchley Ft. Co.	4.50

CLEVELAND, Nov. 6.—One car lemons sold. Steady. Raining.

Lemons.

	Avge.
Granite Hill, A.A. Arlington	$4.95
Golden Hill, Arlington	3.45
Commercial, A.H. Arlington	4.15
Palm Tree, A.H. Arlington	5.00
Crystal, A.H. Arlington	4.15
Commercial O. A.H. Arlington	3.65

PITTSBURG, Nov. 6.—Four cars sold. Market steady on oranges and lemons. Raining.

Valencias.

	Avge.
Clown, Sparr Ft. Co.	$4.40
Plain Ends, Sparr Ft. Co.	3.30
Palm Tree, A.H. Prenda	2.35
Coyote, O.K. Ex.	2.75
Circus, xc, Sparr Ft. Co.	3.80
Squirrel, A.H. Prenda	3.05
Quail, O.K. Ex.	3.55

Lemons.

Belt, A.H. Prenda	$2.70
Loma, V.C. Limoneira	3.95

PHILADELPHIA, Nov. 6.—Three cars Valencias, two cars lemons sold. Also nine cars Floridas. Oranges, $1.65 to $2.50. Grapefruit, $2.80 to $5.25.

Valencias.

Carmencita, S.T. Placentia	$4.35
Pointer, A.C.G. Azusa	3.45
Colombo, S.T. Placentia	3.60
Hunter, A.C.G. Azusa	2.95
Old Oak, Tustin P. Co.	3.40

Lemons.

Quail, O.K. Ex.	$4.40
Blue Jay, O.K. Ex.	3.40

ST. LOUIS, Nov. 6.—Market weak; two cars sold.

Valencias.

	Avge.
Searchlight, S.S. McPherson	$4.20
S.S. Brand, S.S. McPherson	3.35

Lemons.

Bridal Veil, V.C. Limoneira	$4.45
White Cross, V.C. Limoneira	3.75

BOSTON, Nov. 6.—Five cars sold. Clear, cold. Market easier.

Valencias.

	Avge.
George Washington, S.S. Tustin	$3.65
Alta Cresta, A.H. Arlington	5.05
Hobo, A.H. Ex.	3.45
Hobo, A.H. Ex.	3.45
Standard, National O. Co.	3.35
Martha Washington, S.S. Tustin	3.30
Robusta, A.H. Ex.	4.50
Orchard, or., National O. Co.	4.55

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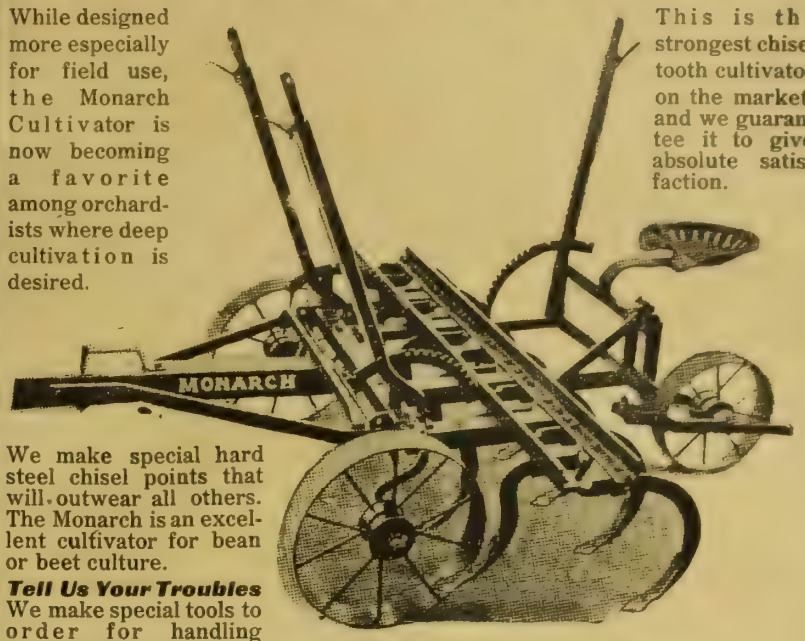

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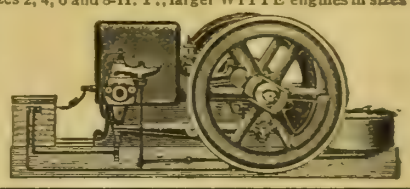

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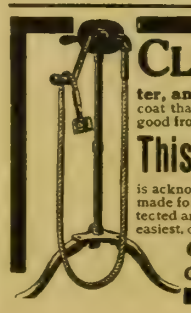

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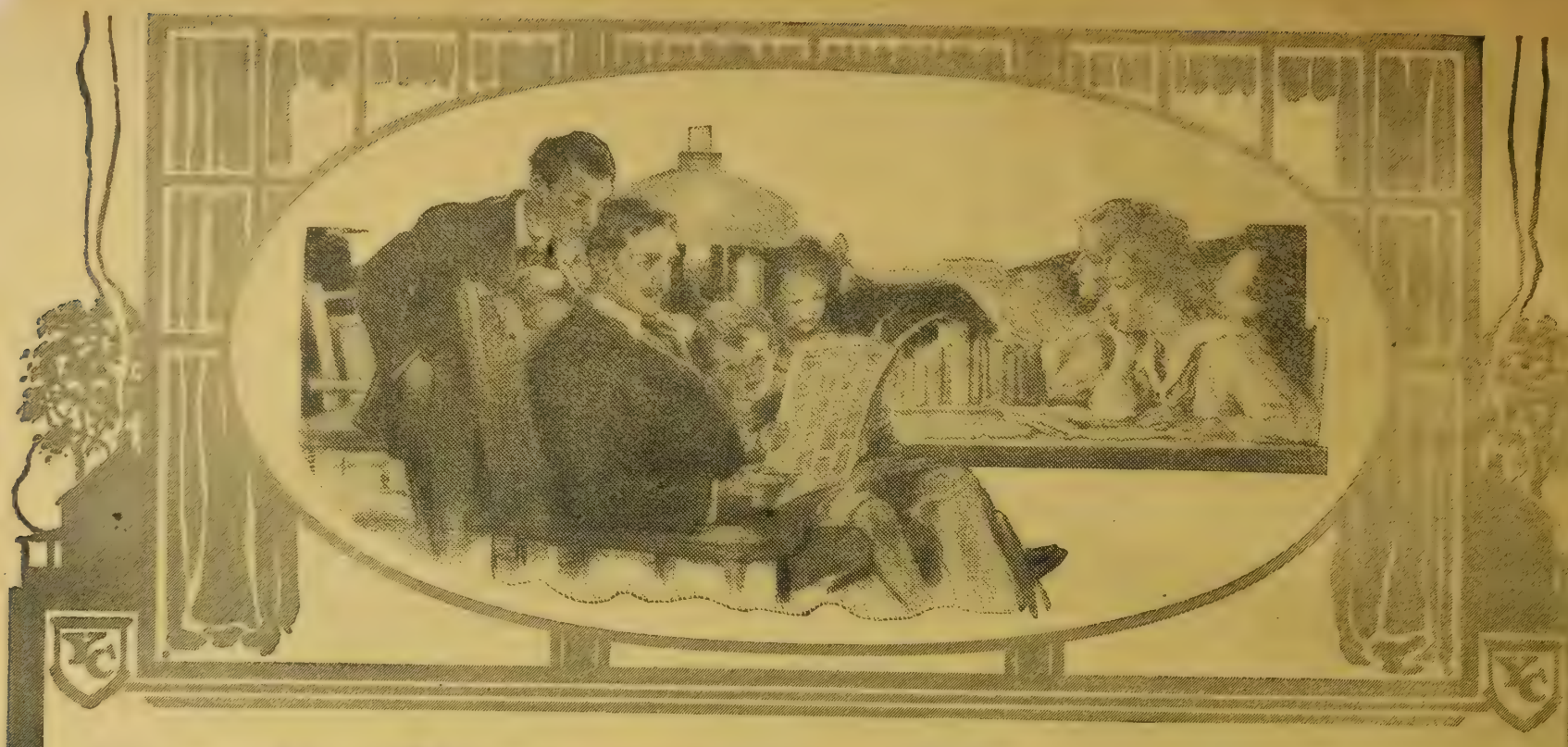

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An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch.

LOS ANGELES NOVEMBER 16, 1911 SAN FRANCISCO

Culture of the Date in Arizona Promises Much

The Engravings Above Are Used by Courtesy of the Arizona Agricultural Experiment Station and Show Date Growing Scenes in Tunis and in Mexico. The View on the Reader's Right Shows the Arabs at Tozeur Harvesting Dates by Passing the Bunches from Hand to Hand Down the Tree. The Scene on the Left Shows Mexicans Harvesting Dates in Lower California by Sliding the Bunches Down a Rope. The Unripe Fruit is then Placed on Mats and Ripened in the Sun.

1912

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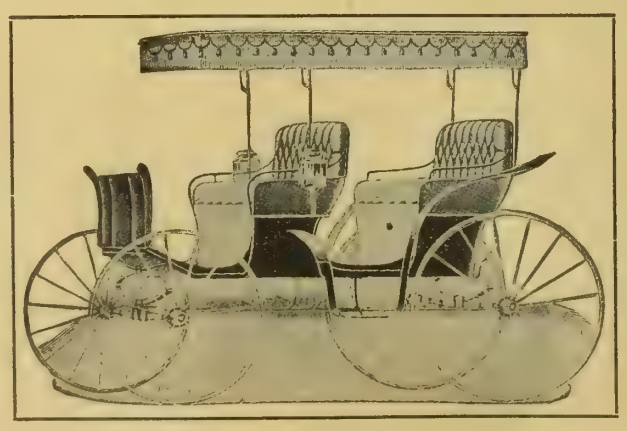

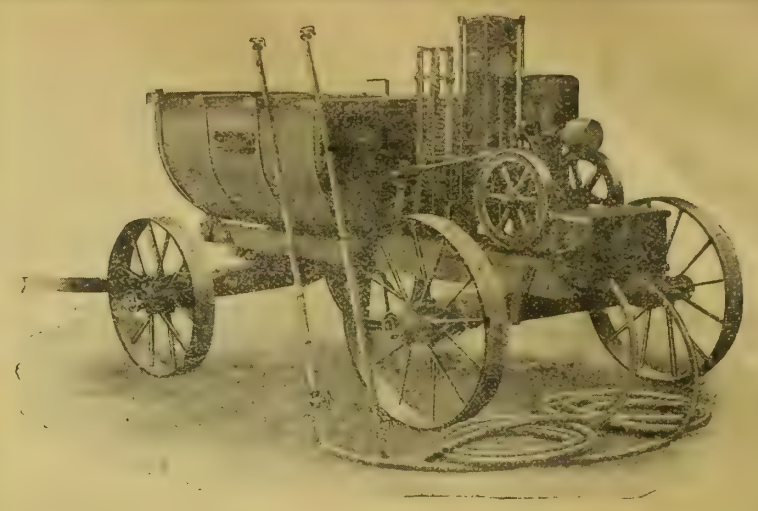

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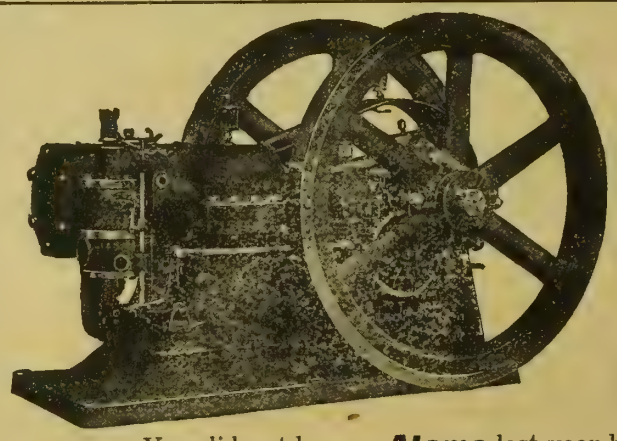

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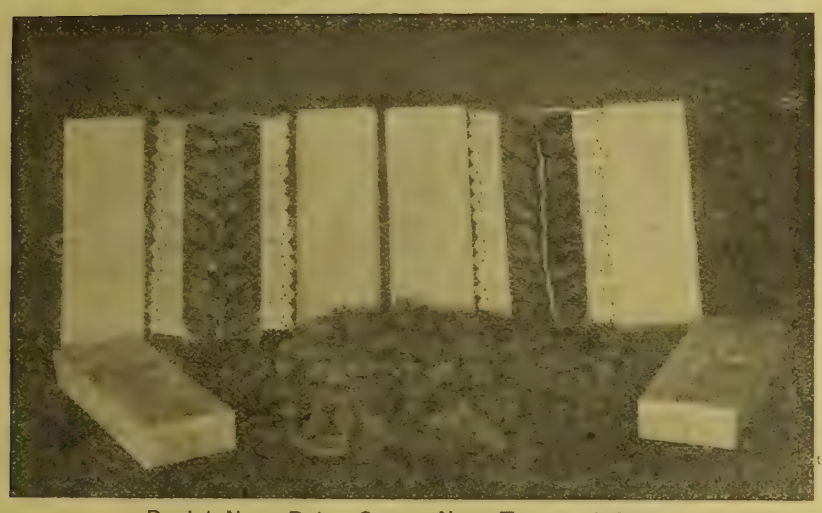
Vol. XXXVII. No. 20. LOS ANGELES: THURSDAY, NOVEMBER 16, 1911 One Dollar the Year

The Ripening of Dates by Artificial Methods

Illustrations from a Valuable Bulletin Just Issued by the Arizona Experiment Station. Artificial Ripening Gives Many Advantages and Permits of Long Shipments of the Fresh Fruits



Deglet Noor Dates Grown Near Tempe, Arizona.

More Arizona Dates.

It is possible that date culture will prove as profitable as its most enthusiastic friends today believe it will, but a few of the more cautious are calling a word of warning. We are told that suckers from the more desirable plants are now commanding as high as $7.00 each in the Coachella and Imperial Valleys. Arizona is also interested, and it is evident from the magnificent fruit obtained in Arizona and desert regions in California that as to quality of fruit the Southwest will beat the world. Some of it is sold as high as $1.00 per pound, and those who have been so fortunate as to test it say that it tastes like more. The extension of our productive industries means prosperity, and we trust many acres will be planted, but we also trust that the planters will not put out their land with the expectation of dollar a pound prices.

Arizona is taking an advanced position in this industry, and aided by government experiment stations, is showing remarkable results. The territorial experiment station has issued information along this line, the latest one being Bulletin No. 66 on "Chemistry and Ripening of the Date by Incubation." It is by A. E. Vinson and G. F. Ferguson, and is a report of scientific studies relating to composition and ripening of dates and the economic results in ripening and marketing.

The Date Harvest at Tozeur, Tunis, Showing Wasteful and Slovenly Methods Which American Practice Will Correct.

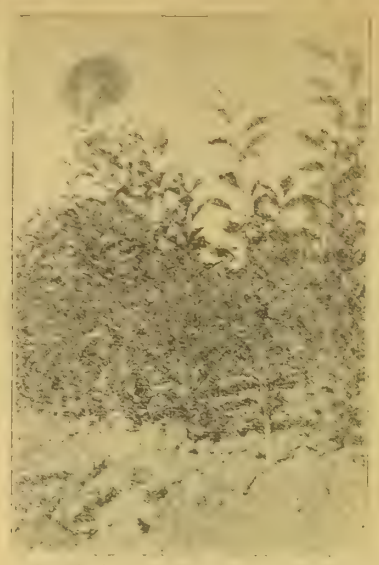
The fruit upon the tree ripens very unevenly. By cutting the entire bunch from the palm before fruit begins to ripen and drop and before attacks by insects, molds and bacteria begin, better control and much finer fruit is secured. Besides there is less danger of loss from rains and worms than where it ripens naturally, and some of the later varieties like the Deglet Noor, which have not done well because of ripening during the cooler weather, are successfully brought through. It is thought that by this process early varieties may now be grown at greater altitudes and in addition dates may be gathered while still hard and shipped long distances, ripened artificially, and marketed fresh and in the best of condition. From Director Forbes' preface we quote:

"Eleven years ago, when attention to this subject was renewed, it was supposed that the imported date palms at Tempe would soon develop large and remunerative crops. But it soon became evident hat there were some cultural difficulties and various enemies to be overcome, before this desirable condition could be realized. Among the causes of delay to a successful outcome were the ground squirrels and the rats which injure or destroy the trees; the Old World scale insects which multiply

(Continued on Page 509.)

Ripening Dates in Lower California.

Transportation to Market in Lower Ca lifornia.



Citrus Trees

First quality trees will be scarce in 1912

The man who plants an orange or lemon grove is planting for a lifetime. Poor trees cannot be considered at any price if he wants good results. A few cents per tree saved at time of purchase often costs dollars per tree in after years.

Why not buy the best? The quality is there and remains long after the price is forgotten. We offer a limited quantity of strictly first-class, healthy trees, one year old buds, for 1912:

6500 Eureka Lemons
2000 Villa Franca Lemons
9000 Washington Navels
750 Valencias
500 Marsh Seedles Grape Fruit

Budded on sour stock roots, grown in loose soil, clean, vigorous trees, guaranteed true to name. These trees have been carefully grown, are straight, and extra care was taken in selecting buds from the best fruiting trees, the parent stock which is of proven prolific habit—thus insuring good bearing trees.

Longer life through seed and bud selection. The above cut shows what these trees were at the time of budding, October, 1910, measuring four to five feet high. The trees now show for themselves. A large portion of them measure from five-eighths of an inch to three-quarters of an inch and have been pronounced by experts to be the finest bunch of one year trees they have ever seen.

We invite inspection and comparison, and solicit correspondence. We will sell these trees at current prices. We will refund traveling expenses to any out of town purchasers. Twenty years experience in expert citrus horticultural work.

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EUREKA LEMONS **VALENCIAS** **WASHINGTON NAVELS**

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Citrus and Tropical Fruits

LEMON FREIGHT RATE.

Commenting on the departure of G. Harold Powell, secretary of the Citrus League, Attorney Call and a number of citrus fruit growers for Washington to attend the lemon rate hearing, the Riverside Press reviews the history of the lemon rate case as follows:

Recent adverse decisions given by the United States commerce court resulted in speedy reopening and rehearing of the lemon railroad rate before the Interstate Commerce Commission, which will be in session in Washington on November 15. The California delegation will arrive in Washington next Monday and will be fully prepared with data and argument for the restoration of the $1 rate.

Representatives of the California lemon industry do not anticipate that there will be a demand on the part of the commission for additional evidence or extended argument, as all of the vital points were covered at the first investigation; but if any additional facts are required they will be promptly presented by Judge Call through Secretary Powell and the fruit growers in attendance at the hearing.

The transcontinental railroads will be represented by officials and counsel.

History of Lemon Rate.

From 1895 to November 30, 1902, the rate on lemons was $1.25 per hundred weight for the middle west and Atlantic seaboard; December 1, 1902, to May 31, 1903, winter relief rate, $1 per hundred weight; June 1, 1903, to November 30, 1903, $1.25; December 1, 1903, to June 15, 1904, $1; June 16, 1904, to October 31, 1904, $1.25.

November 1, 1905, to December 5, 1909, the rate was made permanent voluntarily by the railroads, $1. After the passage of the Payne-Aldrich act, which increased the duty on lemons from 1 cent to 1½ cents per pound, the railroads raised the rate to $1.15 per hundred weight, the tariffs becoming effective December 5, 1909. The growers obtained an injunction in the circuit court of the United States for Southern California, restraining the railroads from putting into effect the $1.15 rate until the reasonableness of it could be passed upon by the commission. The interstate Commerce Commission, 1910, decided the rate of $1.15 to be unreasonable, that the rate should not exceed $1.

Through the circuit court of the United States for district of Kansas the railroads secured an interlocutory injunction suspending the order of the commission and referring the case to the United States commerce court. The commerce court October 5, 1911, issued a permanent injunction restraining the enforcement of the order of the commission, which had the effect of restoring the rate of $1.15 and referred the case back to the commission for a reconsideration.

Commerce Court Decisions.

In deciding the lemon rate case the United States commerce court took the ground that the interstate commerce commission, in fixing the rate of $1, dealt with matters which tended to show the need of the California industry of a high protective tariff against Italy and did not fix it upon tariff considerations. The court in its decision said:

"As in our judgment the order is based primarily on the assumed authority to protect the industry against foreign competition, it must be held void as beyond the powers delegated to the commission. This conclusion renders it unnecessary to determine whether, under evidence, the rate of $1 is confiscatory, or whether the commission is empowered to prescribe blanket rates either generally or subject to the limitation that the rate between the most distant points must be at least non-confiscatory.

"A permanent injunction will be granted, restraining the enforcement of the order as to the rate on lemons, without prejudice to a reopening and reconsideration by the commission of the original proceedings before it or of any further complaint in respect to the $1.15 rate, now disposed of."

Value of Industry.

It is estimated that there are 25,000 acres in California planted to lemons, the citrus fruit industry alone representing an investment of $175,000,000. The annual cash returns for the crop is around $30,000,000.

While 25,000 acres are in lemons, it is known from careful investigation that there still remain 75,000 to 100,000 acres which are adapted to lemon growing at a profit.

Help from Washington.

While in Washington Secretary Powell will urge upon the department of agriculture the necessity of sending a number of specialists to California to make a study of some troubles which affect some of the citrus groves and which are not now well understood. He will also lay before the department the commercial practices of the California industry in the shipment of early oranges from the state, so that the department will have a full understanding of the question of handling the green fruit decision, which was made through the pure food board and which holds that green, immature oranges which have been artificially colored by holding in a warm, moist atmosphere have been treated so as to conceal inferiority, and are therefore subject to the pure food act when they enter into interstate commerce.

OLIVE PICKLING.

So many calls are made for a repetition of Mrs. Sherman's olive pickling formula which was given last year, that we repeat it. It's worth a year's subscription to the Cultivator. Keep it.

* * *

There seems to be no way of absolutely testing the olive to find out exactly the amount of bitterness that must be removed each season. It certainly is true that some seasons the olives are made into pickles with much less trouble. After having pickled them for many seasons, I have found the following method the best. I was first given an insight into this matter by a charming Spanish gentleman, a former governor of California, years ago in Los Angeles. Then ashes from the oak trees were used to furnish the potash to remove the bitterness. As made by these people the olive was delicious. Their success was made by careful attention to little details.

Free Stones.

When the olive pit will slip reason-

ably clear from the meat, it is time to begin to get the barrels or tubs or troughs ready. Everything must be cleaned, scalded, and then finally treated to a dose of lime water to be sure of the containers imparting no foreign taste. The olives are gathered in picking sacks or in tin pails, using care not to bruise them. If there are many to handle it will pay to use a grader for them; if only a few they may be readily graded by hand, separating the larger ones from the smaller ones. Then again if there are many that are not colored, it is better to keep these separate as they do not cut in the same time as more highly colored fruit. A little care in picking to take only the dark fruit saves this color grading.

Lye.

The lye used for cutting the bitter white juices out of the olive must be of good quality and at least 90 per cent pure. The Greenbanks or the Hercules brand come in ten-pound cans and have given us good success. These tins may hold more than is needed, but this strong lye is very useful around the house. It can be used to flush out drains and to mop up floors that are stained.

The ordinary five gallon coal oil cans are cut into buckets with handles and are convenient as measures. The lye solution is made weak, about one and one-half to two per cent solution. The work is done by leaving the lye on twelve to forty-eight hours and once in a great while comes a season when it is necessary to use a second weak solution of lye. That has happened only once to me in many years, I think because the olives were almost at frost point and as the weather was very cold the lye did not act freely. Strong solutions that will penetrate in a few hours act on the tissues of the olive meats and cause them to soften and spoil.

Weigh one and a half to two pounds of lye and add it to one hundred pounds of water. Eight pounds of water is approximately one gallon. A coal oil can holds five gallons or forty pounds of water. Two and a half cans of water added to one and one-half pounds of the lye makes a solution of one and one-half per cent. Then use your two hands as a scoop and add as much common salt as the hands will hold. Mix the salt and lye in the water and when well dissolved pour over the olives. Use enough solution to have it three to four inches deep over the top of the berries. If the olives float, use a piece of clean cheese cloth and then a wooden follower to hold them under. This is usually not necessary, however, as the olives are heavier, if of any size, than this solution. Cover the barrel from the light to save coloring as much as possible. The salt will keep the olives firm while in the lye and also, by its use they are partly salted before they are finished. The slimy bacteria are the only ones that interfere in making olive pickles and these can be controlled by a little salt.

Take from Solution.

Now comes the critical part of the work, training the eye to know when the cutting has proceeded far enough. I usually put the lye on at noontime and at night draw off a pail full or two and pour it again over the top of the olives to keep the lye from settling to the bottom too much. The next morning take a few olives from the barrels that represent an average of the sizes and ripeness. Cut them open with a knife to the pit and see the line of penetration of the lye. The lye carries a distinct yellow stain with it, while the juices of the olive are milky and the meat whiter when untouched by the lye. The lye must penetrate to within a line's breadth of the pit but not absolutely to it. When this line is reached turn off the lye at once. Perhaps once in ten or twelve years there may come a year when a second weak solution needs to be used. I have overcome this difficulty by warming up a tin of the lye solution and in that way secured better penetration. As long as the lye water is soapy or sleek feeling, there is strength in it. Sometimes the olives are as long as 26 to 48 hours in the solution. When the time comes that the olives are almost cut enough,

(Continued on Page 491.)

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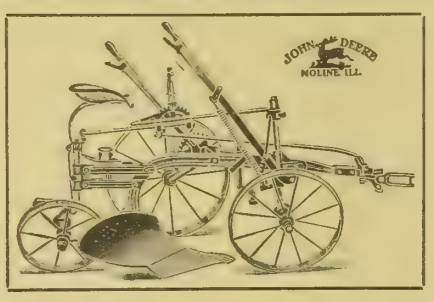

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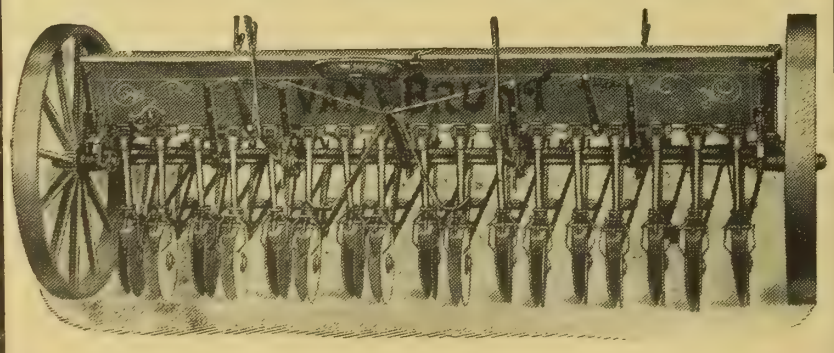

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PICKING AND MARKETING APPLES.

An apple usually should be fully grown and highly colored when picked, to give it the best keeping and commercial qualities. When harvested in that condition it is less liable to scald, of better quality, more attractive in appearance, and is worth more money than when it is picked in greener condition.

An exception to the statement appears to exist in the case of certain varieties when borne on rapidly growing young trees. Such fruit is likely to be overgrown, and under these conditions the apples may need picking before they reach their highest color and full development.

Uniform color may be secured by pruning to let the sunlight into the tree, by cultural conditions that check the growth of the tree early in the fall, and by picking over the trees several times, taking the apples in each picking that have attained the desired degree of color and size.

Apples should be stored as quickly as possible after picking. The fruit ripens rapidly after it is picked, especially if the weather is hot. The ripening which takes place between the time of picking and storage shortens the life of the fruit in the storage house. The fruit rots multiply rapidly if storage is delayed and the fruit becomes heated. If the weather is cool enough to prevent after ripening, a delay in the storage of the fruit may not be injurious to its keeping quality.

A temperature of 31 to 32 degrees F. retards the ripening processes more than a higher temperature. This temperature favors the fruit in other respects.

A fruit wrapper retards the ripening of the fruit; it preserves its bright color, checks transpiration and lessens wilting, protects the apple from bruising, and prevents the spread of fungous spores from decayed to perfect fruit. In commercial practice the use of the wrapper may be advisable on the finest grades of fruit that are placed on the market in small packages.

Apples that are to be stored for any length of time should be placed in closed packages. Fruit in ventilated packages is likely to be injured by wilting. Delicate fruit and fruit on which the ripening processes need to be quickly checked should be stored in the smallest practicable package. The fruit cools more rapidly in small packages.

Apples should be in a firm condition when taken from storage, and kept in a low temperature after removal. A high temperature hastens decomposition and develops scald.

The best fruit keeps best in storage. When the crop is light it may pay to store fruit of inferior grade, but in this case the grades should be established when the fruit is picked. The bruising of the fruit leads to premature decay.

The scald is probably caused by a ferment or enzyme which works most rapidly in a high temperature. Fruit picked before it is mature is more susceptible than highly colored, well developed fruit.

After the fruit is picked its susceptibility to scald increases as the ripening progresses.

The ripening that takes place between the picking of the fruit and its storage makes it more susceptible to scald, and delay in storing the fruit in hot weather is particularly injurious.

The fruit scalds least in a low temperature. On removal from storage late in the season the scald develops quickly, especially when the temperature is high.

It does not appear practicable to treat the fruit with gases or other substances to prevent the scald.

From the practical standpoint the scald may be prevented to the greatest extent by producing highly colored, well developed fruit, by storing it as soon as it is picked in a temperature of 31 to 32 degrees F., by removing it from storage while it is still free from scald, and by holding it after removal in the coolest possible temperature.

A variety may differ in its keeping quality when grown in different parts of the country. It may vary when grown in the same locality under different cultural conditions. The character of the soil, the age of the trees, the care of the orchard—all of these factors modify the growth of the tree and fruit and may affect the keeping quality of the apples. The character of the season also modifies the keeping power of the fruit.

WALNUT BLEACH.

Referring to our recent answer to inquiries as to walnut bleach, Mr. Arthur Staley, secretary of Fullerton-Placentia Walnut Association, writes:

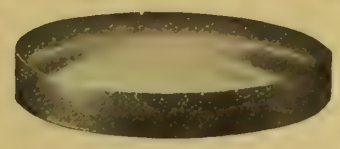
"We use twenty-four pounds chloride of lime and six pounds monohydrate crystals of soda to 50 gallons of water; the monohydrate dissolves in cold water while salsoda has to be boiled. There is no patent on this solution; it is an old preparation known under the name of Javelle water. The Farrell patent, now owned by the Anderson-Barngrover Mfg. Co. of San Jose, is based entirely upon the addition of an acid to the solution coincident with the immersion of the nuts; this hastens the action of the bleach and makes it a success commercially and on a large scale; the same effect is produced by giving the bleach a longer time to act, or by sulphuring very lightly after dipping while the nuts are still wet with the solution.

VALUABLE PEACH.

Mr. George M. Young of Placentia recently brought to this office a couple of magnifient late freestone peaches. The tree is a sprout presumably from stump of an old seedling. It is now growing between two fine orange trees which its owner desired to save and he had about decided to sacrifice the peach, but noticing the high quality of the fruit and its extreme lateness, has kept it from year to year. He has gathered fruit from the 15th of October to as late as the 15th of November. It is of exceptionally fine quality, very large and perfect fruit.

It was submitted to one of the larger peach dealers of Los Angeles and he thought that perhaps it might be an exceptionally high-grade Salway, or if not, a seedling from the Salway. Mr. Young should perpetuate this tree by budding at least a few seedlings to give it a thorough test.

A VICTORY



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NUTS FROM CHINA.

A subscriber in San Diego County, somewhat concerned over the importation of walnuts from Manchuria or portions of Northern China, has caused us to look up the matter somewhat, and we find that last year some $43,000 worth of nuts came into this country from Manchuria. The cry which has been raised is pronounced a "dealers bluff," for there can be no great quantity ever imported from that country.

However, along that line we may quote from Bulletin 204, by Frank Meyer, relative to walnut culture in China. Mr. Meyer says:

Manchurian Nuts.

"Nuts are appreciated by the Chinese to the same extent that they are all over the world, but nut culture is as little practiced in China as it is elsewhere, for nut bearing trees and shrubs seem to have the reputation of not needing much cultivation. One therefore finds that a great many of the various nuts obtained in China have been collected from trees and shrubs in a wild or semi wild state.

"The nuts which came under the writer's observation are as follows:

Walnuts (Chinese Name "Ho to").

"The walnut (Juglans regia sinensis) is a native of Northern China, and thrives to perfection in the rich, loamy soil of some of the broad, sheltered valleys of that country. In some sections the trees are grown in regular orchards, in other localities one finds them planted here and there as solitary specimens. The latter practice is especially common in the narrow mountain valleys, where terraces have often been made to supply the trees with a sufficient quantity of soil.

"The Chinese have not learned the art of grafting or budding the walnut, and all the trees, therefore, are seedlings. Hence there is an enormous variation in the habits of the trees and in the size and quality of the nuts. In some sections very superior strains of nuts exist, while elsewhere the quality is poor.

"In the vicinity of Changli, Chihli Province, there are some walnut orchards in which the trees vary to a remarkable degree. Some produce small, hard shelled nuts of poor flavor, while others bear fine large nuts with a really fine flavor, and having shells so thin that they can be cracked with the fingers like a peanut. Between these extremes one finds many gradations in hardness of shell, size and flavor. It is very likely that some kinds of these Chinese nuts may prove to be much hardier than our present Persian strain of walnuts, and in all probability they will thrive especially in certain sections of the southern Rocky Mountain region.

Wild Walnuts (Chinese "Shan ho to").

"At the present time the walnut is but very sparingly met with in the wild state. Northern China has been settled too long to afford us the opportunity of seeing much of her original wild arboreal vegetation. In the Pangshan district, however, to the east of Peking, one may still find a few specimens of the real wild walnut. They are found in the mountains, growing in ravines among large boulders. The trees are smaller and less vigorous in growth than the cultivated ones. The leaves and nuts are also smaller, and the latter less sweet than those from cultivated trees, but otherwies there is little difference."

SOME OLD GRAPEVINES.

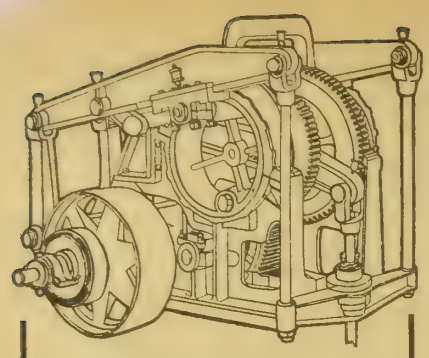
Grapevines have been famous always for their longevity; in fact, it is doubtful if they ever die of old age, as even the longest-lived trees do. Pliny, the Roman writer, who was a great observer, mentions one 600 years old, and there have existed vines in modern times in Italy and France four centuries. An article in the Technical World tells of some of the famous old vines of California, which were introduced, probably from Spain, by the old Franciscan fathers, away back in the eighteenth century. Near Santa Barbara is a huge vine called "La Vine Grande," which so far as is known, is the biggest individual grape vine in the world. The trunk is ten feet in circumference and resembles the trunk of a big oak rather than a grape vine. Some of its branches are over four feet round, and the vine is trained over a massive arbor which covers a space of 10,000 square feet. This vine has produced as much as twelve tons of grapes in a single season. This vine is not as old as might be supposed from its great size, for it was planted by a Spanish woman in 1842.

The famous "Trinity" vine near Los Angeles—so called because it has three principal branches—is much older, though it covers only half as much ground as "La Vine Grande." It was a very large vine as far back as the year 1800. All these old-time vines are of the Mission and Rose of Peru variety and they seem to be immune to destructive phylloxera and other pests.

There is a famous wild grape vine on the shores of Mobile Bay, near Daphne, Ala., which is known as the "General Jackson' 'vine, from the fact that "Old Hickory" camped under it during his campaign against the Seminole Indians. This vine is over six feet around, and is believed to be upwards of a century old.—Phila. Record.

VIRTUE OF THE APPLE.

The following taken from the New York Tribune, is interesting, as describing the medicinal virtues of the apple: "Do you know what you're eating?" said the doctor to the girl. "An apple, of course." "You are eating," said the doctor, "albumen, sugar, gum, malic acid, gallic acid, fiber, water and phosphorous." "I hope those things are good. They sound alarming." "Nothing could be better. You ate, I observed, rather too much meat at dinner. The malic acid of apples neutralizes the excess of chalky matter caused by too much meat, and thereby helps to keep you young. Apples are good for your complexion. The acids drive out the noxious matter which cause skin eruptions. They are good for your brain, which those same noxious matters, if retained, render sluggish. Moreover, the acids of the apples diminish the acidity of the stomach that comes with some forms of indigestion. The phosphorus, of which apples contain a larger percentage than any other fruit or vegetable, renews the essential nervous matter of the brain and spinal column. Oh, the ancients were not wrong when they esteemed the apple the food of the gods—the magic renewer of youth to which the gods resorted when they felt themselves growing old and feeble. I think I'll have an apple," concluded the doctor.—Green's Fruit Grower.



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One orchardist at Orland will plant 2,200 almond trees this season.

Small Fruits and Vegetables

GARDEN FERTILITY.

A variety of crops is grown in the garden, hence a variety of plant food elements in the soil is necessary for large yields of well matured crops of fruits and vegetables.

Best gardeners everywhere invariably recommend extensive use of well decomposed stable manure, preferably that from the cow stable. But well decomposed manure of any kind on the average farm is a scarce article. Time is required for the fresh manure to decompose, and not many farmers have the time, or take the time, to place the product in heaps for this change.

Making a compost heap to supply fertilizer for the garden and flower beds is a good thing if there is time for it and the work can be done right. One trouble in piling manure and other trash for decomposition is that with heavy rains during the decomposition process much of the richness of the mass is leached out to soak into the ground where not needed. The loss from such leaching, of course, could be prevented by the construction of concrete or other suitable floor and walls for retaining the liquids leached out by rains, or by keeping the manure under shed or other shelter where the rains could not reach.

In general practice, however, for handling the manures produced at home for the best results with the least labor, it is best to apply them to the land as fast as made. In this way the labor of handling is reduced to a minimum, and any richness leached out from rains finds its way immediately into the cultivated soil where most needed. All of the fertility is saved on the spot and readily becomes available for the growing garden crops.

One of the best ways to fertilize the garden with manures produced at home is to begin to apply them to the garden soil in the fall as soon as the crops are out of the way. This can be done either before or after the fall or early winter plowing of the garden soil. With cooler weather and more stability of the animals, more manure will be made in the stables. As fast as this accumulates, every day if need be, clean out the stables, cart the manure to the garden and place either in heaps or spread evenly over the ground. If the garden is to be plowed yet this year it will be better to spread it. If scattered, apply thickly. With either piling in small heaps, or scattering the manure will have plenty of time to decompose and become mild and safe. The earlier it is applied and the more rains and mild weather the more decomposed and milder it will become.

If some is applied before the ground is plowed, and is afterwards turned under, it will decompose under the soil, giving perhaps better results than when allowed to rot on the surface. With decay and change of any manure, ammonia and other fertilizing compounds in the gaseous state are given off, hence with decomposition down in the soil these compounds are absorbed and retained. Some of them come in contact with insoluble minerals of the soil, dissolving them or uniting with them to make these refractory minerals available plant foods, as well as loosening up the soil and aiding the growth of beneficial bacteria.

We have begun to manure our garden this fall, spreading the stable product thickly upon the surface, in some places between the rows of growing crops yet on the ground. Already, with the abundant late summer and fall rains, this manure has begun to decay nicely. The richness is soaking into the ground, and the mild undissolved portions will be in perfect condition for mixing with the soil next spring to make it warm, light, and friable. We expect to cover the entire garden this fall and early winter with fresh manure from the cows' and horses' stables so that it will have time to become rotted, mild, and safe for use next season.

Not only common stable manure, but that from pig pens and poultry houses is good. In fact, the more kinds used the better, as more fertilizing elements will be furnished.

Where wood is used for fuel and ashes produced, this by-product of the stoves makes an excellent garden fertilizer, and is especially good for all kinds of fruit. But when applying wood ashes, never place them directly against green trees or other plants, and never place them with poultry droppings, or other animal fertilizers, as the two react chemically on each other to liberate ammonia, which contains nitrogen, one of the necessary soil elements for large and vigorous plant growth. If any absorbent is needed on the poultry droppings before removal from the houses, use dry soil or coal ashes. It is well to store both wood ashes and poultry droppings in barrels or boxes under shelter during the winter, and apply them to the garden immediately before planting time in spring. Both of these fertilizers work quickly when on or mixed with rich soil, and if no growing crops are there to utilize the fertilizing elements set free some of them are apt to be lost.

Wash water, containing soap and a variety of dirt, has some fertilizing value and may be applied to the garden at any time with profit.—Journal of Agriculture.

CARROTS—TOMATO BLIGHT.

We don't believe that carrots will prevent tomato blight, however, we give the following, written by a correspondent, Mr. Harold Ellis of Walla Walla, Wash., for what it is worth:

"Tomato blight, which has for years puzzled experts, and which even now is without an assigned cause, can be easily prevented, according to H. J. Brown, a truck gardener of this city, who by accident fell upon what he claims is an absolute preventive, if followed closely.

"His method is to plant carrots between the rows, and he is the authority for the statement that if this is done, blight will not appear among the tomato plants. He has tried this two years since he first discovered it, and although blight was bad among the tomatoes of this vicinity this year, his were not molested at all.

"The discovery came through the plan of Mr. Brown in planting root vegetables among those which grew fruit in their tops, in order to conserve his garden space as much as possible. Carrots were planted among some of the tomatoes, and other vegetables among others. The carrot rowed tomatoes had not a trace of blight, but the further back the tomatoes were from the carrots, the more blight appeared. While it is not thought any particular kind of carrots is required, the variety used by Mr. Brown was the Kuerande, or Oxheart.

"While science does not back this discovery, it is at least worth while in districts bothered with blight."

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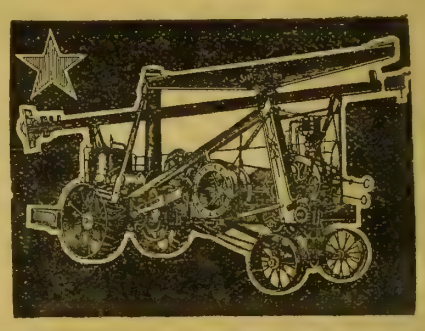

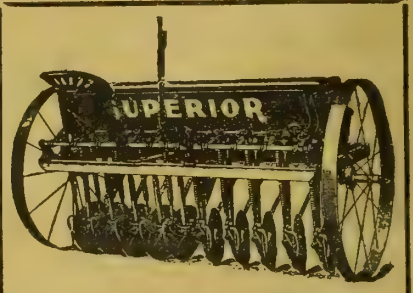

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In one season the Clipper will drive them all out.

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The Ornamental Garden

GARDENS OF THE WEST.

In no place do we find the garden more beautiful than in the West—spring, summer, winter, all the year around we have gardens resplendent with color and loveliness.

The long, hot summers are harmful not at all—the perfect irrigation system now prevalent throughout the country gives us the opportunity of having our lawns as green in July and August as they were in March and April.

The Wistaria Vine from Japan grows to great height and extreme beauty in California. One root alone will put forth a vine that will almost cover a house.

The Iris—boasted of by the Japanese is as magnificent as in its native home.

The Passion Vine, another climber, will run wild if watered extensively. I have seen one vine alone entirely envelop a large cypress and eventually kill the tree.

The geranium, usually potted in the eastern states, grows to a shrub in the West. It is now being used for hedges.

The ivy, or climbing geranium, will bloom so heavily that the blossoms obliterate the leaves.

The nasturtium—that daring little "runabout"—grows wild as a rule. It seeds itself from year to year and the colors are always changing of their own accord.

The dahlia is another bulb-plant that has become a great favorite because of its size and beauty. A late variety—the Poinsettia dahlia—is almost as handsome as the Poinsettia itself.

The chrysanthemum—a hot house flower—is now grown outdoors in great quantity.

The Oleander, that beautiful flowering shrub, grows to even greater size in the western states than in its native country, Algeria, North Africa.

The Mexican settlers of California are especially fond of this tree-like shrub, and an Oleander bush is found in almost every garden that surrounds a hacienda. The Mexican women in the southwestern states are extremely proud of their gardens and will carry huge bucketfulls of water—often from a great distance—to their gardens that every plant and shrub and bit of green about the home may thrive. They cannot always afford up-to-date plumbing, but they can afford a pretty garden and therefore do not find it too much trouble to carry the water from the creeks or roughly made wooden flumes that one sees so often throughout the country.

The Lilac is another shrub that grows to great size in the "Land of Sunshine." In the early spring the hillsides are a mass of blue with the wild lilac blossoms.

It is the intermingling of the wild and cultivated that makes the gardens of the western states an ever-changing novelty. Palms and pretty shrubs are planted within a few yards of giant oaks and redwoods; pampas grass flourishes beside Wild Madrone, Wild Lilac and various other trees and shrubs; lawns edge off into very carpets of wild flowers of every kind; pansies bloom beside the fair but uncultivated Eschscholtzia—everywhere you find it so and this mixing of the two is harmonious in color and appearance.

A handsome specimen of a climbing rose will reach the height of its ambition when it reaches to the top of an immense redwood tree.

In one country home I know of an ugly drainage creek entirely hidden by a double row of Calla Lillies which bloom far into the summer. These Callas derive their nourishment from the water of this drainage creek and the flowers grow to great proportions and beauty.

I have seen a bungalow built upon a barren, sloping hillside turned into a homelike nest simply by the careful planting of a garden. Climbing roses now adorn walls and veranda, fruit trees and elms thrive here and there about the place, a pretty lawn is always green, and the bungalow is surrounded by as pretty a garden as anyone could wish to see.

When people realize the value of flowers, the pleasure to be derived from the time of the planting of the tiny seed to the final blossoming of the flowers, they will have discovered the "bag of gold at the end of the rainbow"—that key to happiness which is within reach of all.—Irrigation.

BUDDING ROSES.

The season of the year is again at hand when the thoughtful gardener will get busy among his rose bushes which have not come up to his ideals in the character of flower he desires. Well established plants that have not, for some unknown cause, produced flowers of good form and substance, may be worked to such as seem best suited to the soil and environments, under his care. Buds set the first part of this month, will, if properly cared for make vigorous growth and produce fine flowers the latter part of the season, if they belong to the tea section of the family. There is one fact that must always be kept in mind when the work is done, namely: plants, like men and women have their affinities. Experiments have demonstrated beyond a shadow of doubt that some varieties of roses are not congenial to other varieties when the attempt is made to unite the two by the process of budding. It is for this reason that one firm in this southland use three species of roses on which to work the varieties in general cultivation. For a stock on which to work the fastidious Marechal Niel, the queen of the teas, Banksia is par excellent. On its own roots it is feeble and unsatisfactory, but on the Banksia it makes a prodigious growth, and blooms freely. A number of varieties may be worked on the same stalk. The idea, however, is not a good one. A number of varieties, grown on one bush may be interesting, but it is neither natural nor beautiful.

Soak seeds of cypress vine for a few hours in hot water just before planting. The hard seeds of the canna may need a bit of filing ere the germ can push its way out; but care should be taken not to injure it in the process.

The Japanese morning glory is slower in attaining the blooming size than the old-fashioned flower, yet its larger size and clear colors make amends for slower maturity.

A reliable authority advises us that if moles disturb the lawn and flowers, insert moth balls in their runs, and they will bother no more.

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Write for our new catalogue of Bulbs, contains also Pansies and Sweet Peas: all things to plant now. Mailed free.

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Freesias, white (Postpaid price)	15c doz.
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Gladiolus, early flowering, pink or white (Postpaid price)	25c doz.

Order now and plant early for Spring Flowers

C. C. MORSE & CO., 115 Market St., San Francisco

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These 3 Vegetables for 10 Cents

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LILLY'S "DELICIOUS" LETTUCE. A variety introduced by us, very early with fine, hard, medium-sized heads, rich yellow heart, with a delicious buttery flavor.

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Catalogue Ready for Mailing, Free

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Lilly's Seeds are the Standard of the West. They have given satisfaction to farmers for over a decade. They are particularly adapted to the climatic and soil conditions of the West Our seeds are tested by us before being offered for sale. We have an expert seed tester, a government graduate.

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New crop seed, recleaned. *No Alfalfa Weevil* where this seed was grown. Samples and quotations on request.

BULB PLANTING is now in full swing and our second shipment of Holland Bulbs has arrived. It consists of Anemones, Ranunculus, Iris, etc. Ask for our Free Bulb Catalog containing full Cultural Directions for California. Our "Hints on Gardening" and Seed Catalog also mailed free on request.

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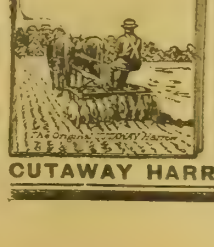

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Different than all others and better because of the double gears, big oil boxes, drop-forged wrist pin, removable bearings, center lift. No side strain, no noise. Big, heavy and powerful. 4, 6, 8, 10, 12, 14, 16, 18, 20 ft. diameters. Send for catalog. Also feed mills, pump jacks and gasoline engines.

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General Agriculture

TAKING CARE OF AN AUTOMOBILE.

The main cost of operation of the modern automobile is not in keeping the machine itself in repair, in the gasoline or lubricants it takes, but in keeping good tires on the four wheels. It seems surprising, after having so nearly perfected everything else, that the inventive ability of man should be so unable to lower the cost of tire maintenance. Without a doubt, it costs two cents for tires where it costs one cent for every other and all other things. We are not saying this because it may have occurred to us to say it in a casual sort of way, but because we have had the experience and know it to be a fact. If anything I here say about the care of automobile tires helps anyone to save an honest dollar, I will be glad of it, for rubber tires cost enough, goodness knows, and a little saved amounts to more than a little in dollars and cents.

The first thing to learn about the care of tires is to keep enough air in them. A great many, at first thought, somehow get a firm hold of the idea that the more air there is in a tire the harder it is on the tire. Let loose of that idea instantly and take the opposite one instead. The more air there is in a tire, up to a certain pressure, the easier it is on both fabric and rubber of which the tire is made. For a 32x3½ inch tire the air pressure should be kept up to eighty pounds, and other sizes in proportion. If you run a tire with insufficient air pressure the side walls of the tire bend at every revolution of the wheel, and the fabric will soon break at this point, just like a piece of wire will break after many bendings. Keeping insufficient air in a tire on the theory that it will not be so apt to blow out is a mistake, it will blow out quicker from too little pressure than from too much pressure, although it is not advisable to get them too tight.

After you have run a tire 1000 or more miles more or less, cuts will appear on the rubber tread, caused by stone bruises, running over pieces of glass and other sharp obstructions. Rubber companies now have on the market a sort of dough rubber, which can be handled like dough, but it will harden when exposed to the air for a time. It is a good idea to keep some of this on hand, and to stop all cuts and bruises in tires as soon as they appear. While this stuff will not last as long as raw rubber vulcanized into the tread, it will last for several hundred miles. The main thing is to keep all cuts and bruises filled, for it is this outer rubber tread that protects the inner fabric. It should be remembered that the outer rubber is for protection and the inner fabric is for strength. Both must be there, one to help the other, in order to insure long life.

One of the best investments an auto owner can make is the purchase of a portable vulcanizer. Out on the farm it is usually impossible to use the electric vulcanizer, so you will have to get one that is heated with gasoline or alcohol. The gasoline heated vulcanizer is very satisfactory. Such an outfit can be had for from $7.50 to $12.50, according to size. Directions come with it, and with the right kind of rubber stock to work with, you will soon surprise yourself in the good work you will be able to do. A hole in an inner tube can be vulcanized until the place cannot be detected afterwards, a much more satisfactory job than to stick on a patch, for patches will burn off quickly in hot weather, and let the air out at a most unexpected and inopportune time.

When winter comes and the roads are such that you will likely not use the car for some time, it is a good idea to let the air out of the tires, first blocking up under the axles. This relieves the strain and will help a little in the preservation of your tires. Keeping the mud and dirt washed off the tires is another help toward longevity, and keeping grease off the rubber is a greater means of preservation. Grease will rot rubber quicker than any other thing with which a tire is apt to come in contact, and the man who is careless in this respect is sure to pay dear for it.

As the preface to this article stated that the cost of operation was more in tires than in all else together, I would place the cost on a five-passenger car at three cents per mile for tires and two cents for gasoline, lubricants of all kinds and the probable repairs it might be necessary to buy from time to time. These figures are given from an experience of nearly two years in running a five-passenger car. Some may say the cost has been placed too high, and perhaps a few others will say it is too low, but I am figuring on a basis of doing all the work on the car myself, to keeping the auto itself in good running shape, the tires and tubes patched and repaired myself, and in the figures I give I have endeavored to allow myself day wages for the work done on account of the car. For the first 1000 to 2000 miles it is probable the tires will require no attention, except to see that the air pressure is up to full notch, and they are kept clean. Punctures may cause a little trouble occasionally but not much expense if you have the little vulcanizer to "cure" the tiny leak in the tube. Here in Kansas we have a great many hedges, and hedge thorns are productive of more or less punctures, unless you are careful. It is a good plan to run your hands over the tires quite often, feeling for these thorns. Sometimes they will stick in a tire for days without pushing in far enough to tap the inner tube, but sooner or later, unless they are pulled out, they will be crowded in. The thing to do is to pull them out, if possible before they go in far enough to reach the tube, and this you can easily do if you find them.

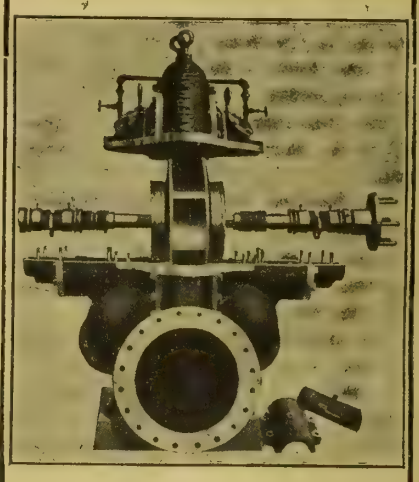
Lately I have been using an "inner shoe" in each of two old casings, casings that are too weak to hold without some inner protection. They cost $8.50 apiece, but I have not used them long enough to determine whether they will be money-savers or not. I have tried one set of treads or outer protectors, but I am of the opinion that the casings would have lasted longer without them than with them on. It is next to impossible to get them tight enough so they will not slip and chafe the rubber, especially on the back wheels, and this causes unnecessary heat, which rots and injures the life of the rubber more than the actual road contact. They are a good thing when the roads are very rough, frozen or rutty, but otherwise I am beginning to believe they are better off than on. I may be wrong in this, but I notice few around here are buying their second set of protectors.

Last of all, while the operation of an auto appears to cost some money, it gives back to the careful operator about all it costs, with a whole lot of pleasure besides. This farm is nearly eight miles from town. It is a hard half-day on the work horses to make this trip, and since getting the auto they have had to make it but a very few times, except to haul loads that could not be hauled in the auto. When the roads are too heavy for the auto

This is the Pump

selected from all others for installation in the

MODEL IRRIGATING PLANT OF THE WEST



Two year's service confirmed the engineers' selection and to the nine American Centrifugal Pumps installed two years ago at the **Patterson Ranch** will now be added—

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FOR SMOKER OR AUTOMOBILIST

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For selling 24 pieces of jewelry at 10c each when sold send us $2.4 and you can have your choice of a Doll, Air Rifle, Roller Skates, Foot Ball, Fountain Pen, Sewing Machine, Boxing Gloves, Bracelet, Telescope, Electric Engine or Gold Watch. We send catalog describing each, with jewelry. Send at once.

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the fields are too wet to be worked, so the teams are able to go then, if it is necessary to go, but when there is work to do in the fields the roads are good then and the auto makes the trip instead of the tired teams. It is also easier on the passengers and a saving of more than 50 per cent in the time required on the road. But why go on to enumerate what the auto can do—the object of these articles was to tell what it cost to do it with an auto, and as nearly as I am able to tell it I have told it. Year in and year out, call it five cents a mile, and you'll not miss it far, unless you go at a reckless rate and treat the machine just as recklessly in every other way. —Wisconsin Farmer.

ALFALFA IN ROWS FOR SEED PRODUCTION.

Mr. P. K. Blinn, alfalfa specialist of the Colorado Experiment Station, with headquarters at Rocky Ford, Colo., has called attention to the necessity of planting alfalfa in rows for the most successful seed production. So much inquiry is being made at the present time that it seems advisable to again call attention to certain points which should be observed in growing alfalfa in rows for seed production.

The object of putting alfalfa in rows for seed production is to secure a greater control of the moisture. Under irrigation this greater control is obtained because by the row method the alfalfa can be irrigated by furrows. The furrows may be smoothed out with the furrowing machine so that the water may be run through quickly, thus giving a light irrigation. Cultivation of the rows assists in the conservation of moisture. Thus by control of the two factors, irrigation and cultivation, the necessary amount of moisture for the best crop development is secured. Too much water tends to produce vegetative growth at the expense of seed production. Under irrigation the rows should be planted 20 inches apart, and every other row furrowed out for irrigation. When, however, alfalfa is planted on dry land for the production of seed, the rows should be farther apart and the plants thinner in the row, in order to permit the amount of water commonly present to suffice for the plants which are actually on the ground. By dry land methods, the rows as a consequence should not be placed closer than 36 inches apart. The plants should be drilled in the row and may well be thinned to 20 inches apart in the row, leaving good, strong plants when the thinning is done.

Mr. Blinn reports that he saw alfalfa planted 40 inches apart between rows, and 40 inches in the rows, at Highmore, North Dakota, which yielded seed at the rate of five bushels per acre, where the rainfall was only seven inches for the entire season. From our experience and the experience of others on dry land, it would seem that 36 to 42 inches is about the proper distance to plant alfalfa in rows for dry land seed production. The alfalfa should be given as thorough cultivation as is given corn or potatoes. If this is done, a good average seed yield can be produced for each season. If thicker planting is made on the dry land, it does not leave a sufficient supply of soil moisture to mature a good seed crop. Success is only guaranteed when the number of plants is reduced to the carrying capacity of the soil.

Alfalfa growers of Honey Lake Valley, Lassen County, are harvesting a fine seed crop.

WEIGHT AND LENGTH OF ROOT SYSTEMS.

Different investigators have found the following amounts of root systems for the common farm crops. The percentages are based on the dry weight of the aerial part of the plant—that is, the part above the surface of the ground:

Clover roots, 100 per cent of the weight of the total year's crop; brome grass, 100 per cent; wheat, 45 per cent; oats, 45 per cent and 14 per cent; rye, 52 per cent; flax, 34 per cent; peas, 52 per cent and 9 per cent; barley, 13 per cent. These figures vary considerably, but they show that the root systems of plants are very extensive. There is a tendency for a greater development of root system under arid conditions, due to the greater distances which the roots must travel for water and to the greater difficulty which plants experience in absorbing the necessary amount of soil solution.

The total length of root systems of plants has been found to vary as follows: Barley, 128 feet; oats, 150 feet; wheat, 268 feet and 1800 feet; rye, 385 feet; a corn plant in the upper three feet of soil, 1,452 feet; and a full grown pumpkin vine, 15⅝ miles.

It has been observed that root systems tend to greater length in a richer and more porous soil. In one case a barley plant produced 128 feet of roots in a rich garden soil, and a similar plant in a coarse grained, compact soil produced only 80 feet of roots. Other conditions being equal, the root systetms of plants usually develop in proportion to the development of the aerial parts.—D. W. Frear, Colorado Agricultural College.

Live Oak, Sutter County, will plant large area to rice.

THE ECONOMY OF A PARCELS POST.

The more one considers the possibilities of a parcels post the more feasible it seems. Every thinking person marvels at the economic waste in the present day methods of city delivery. By your house in Yonkers, for instance—if you happen to live in Yonkers—there now rattle, once or twice daily, the wagons of your butcher, your baker, your laundryman, your milkman and your grocer, as well as those of the various butchers, bakers, laundrymen, milkmen and grocerymen of all your neighbors, all covering, in staggering wasteful duplication, the same route. Besides them, up from the city come, in further duplication and long distance waste, the wagons of the nine different New York department stores that deliver in Yonkers, the wagons of the four local express companies that divide the "independent" business, and those of the two general express companies which do the high priced long distance business. Yet, when you think of it, one wagon could come to you three times a day and do the work of all these people, more effectively and at one-tenth of the present total expense.—Fremont Rider in the World's Work for April.

IOWA THE AUTO STATE.

There were 28,000 automobiles in Iowa on July 1, 1911, the greater number owned by the farmer and villager. This is five to one as compared with New York state on the basis of population.

Flies kill more people than wild beasts and poisonous snakes. Many of these beasts and snakes never get a chance to kill any human being; but any one of the millions of flies found in most of our towns and cities has a chance, if he comes into a house carrying typhoid germs, of killing a whole family.

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Buy your supplies for the holidays from McStay at wholesale prices. We carry an immense stock and can fill your wants in every line. We guarantee safe delivery and prompt shipment. No need to pay high retail prices for groceries and other necessities of life. We buy direct from the producer in large quantities and sell to you in any quantity desired—saving all middlemen's profits.

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Our candies are made fresh daily of pure cane sugar and fruit flavorings—and in hygienically clean kitchens.

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CHOCOLATES— Hand made 5 lb. box.....$1.30

" " 1 " fancy box .... .31

Fancy Mixed— 5 lb. box ..... .85

All kinds of candies at prices that will save you 50%

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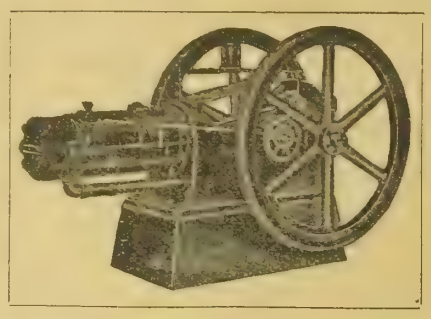

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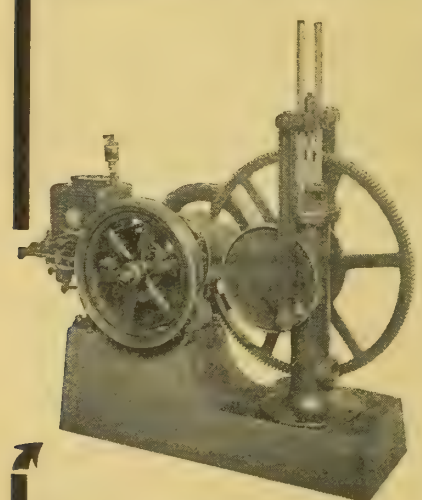

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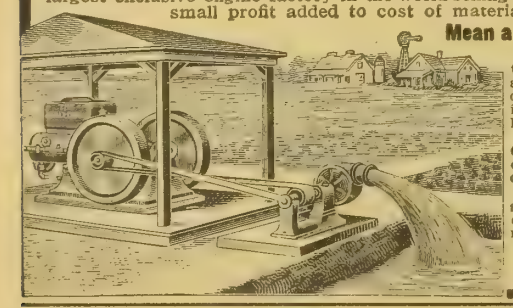

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Irrigation and Forestry

MILLIONS DUE CALIFORNIA.

By A. R. Kanaga.

Though our reclamation law was passed eight years ago, and our government is wisely spending $119,555,000 in reclaiming arid lands by means of irrigation, yet our state which has more arid and semi-arid land than any state in the Union, has up to the present time received practically nothing from this national fund. Let us see how the other states have fared.

Arizona	$13,640,000
Colorado	9,865,000
Idaho	19,719,000
Nebraska-Wyoming	10,280,000
Montana	15,695,000
Nevada	6,380,000
New Mexico	10,250,000
North Dakota	880,000
Oregon	6,060,000
South Dakota	3,000,000
Utah	2,063,000
Washington	11,558,000
Wyoming	6,750,000

California's sum total in one project up to this hour is only $620,000 and the combined so-called Oregon-California and Arizona-California projects will complete every ditch on the California side for less than $250,000 and the latter sum will not be spent for years in my estimation, making less than one million for California.

New Mexico has one single enterprise that will cost $9,000,000, known as the Elephant Butte, or New Mexico-Texas project.

We have more semi-arid land than Montana and I have been over that state from end to end, and yet they are in the front with $15,695,000 and our needs are the equal of that state, and we have the semi-arid land and the water just as they have, but those Montana men went after those millions while our people reposed in somnolence.

The land commissioners of Idaho in their last report say that 49 private irrigation companies are operating in that commonwealth. If that is true a very large part of their land is taken up and California has five times as much available land for irrigation as Idaho, and yet the latter gets $19,719,000 to our $620,000.

I have attended the last twelve sessions of our National Irrigation Congress, and when I contrasted the large attendance and vital interest of other states with the apathy of California as shown in her half dozen delegates, I was discouraged beyond words to express. Other states have been in this reclamation sack with both hands and feet in their wild scramble for money. You must remember that this money comes from the sale of public lands and our state has brought in fifteen times as much in this way as Arizona and some other states, and we have seven times as much arid land here as they have in the last named territory, yet they have secured $13,640,000 and our state $620,000. You ask what are we going to do about it. I answer, get to work. Lay these facts before your senator or your congressman and send some delegates from your country to Chicago, and attend our next National Irrigation Congress and show your interest in vigorous and aggressive action that one or two of the next projects taken up shall be in this state. Our state has today more than 1,500,000 acres of semi-arid land needing water. Yet this fund is being diverted to all other states but ours.

Now as for the Oregon-California, or better known as the Klamath project, they have in Oregon 300,000 acres, and about 10,000 acres in California, and nothing will be done to reclaim our land across the line for years to come. This $4,860,000 spent by the government was, and is, for Oregon and not for us.

Take the so-called Arizona-California project at Yuma. $5,000,000 is being spent here, and it irrigates 110,000 acres in Arizona and only a small tract over in California for only a small part is carried over on the California side, where most of the lands are included in the Indian reservation, and not $100,000 will ever be spent on the lands on our side of the line. These last two projects have been paraded before our people as California enterprises, or joint ones, with states named, and I protest against their being held up as California projects in any respect. They are Oregon and Arizona enterprises pure and simple.

Our government has now projects in course of building that are to cost when completed $119,555,000, and it is estimated that $50,000,000 will be spent by the reclamation service in the next five years, and unless we do something we will not get a dollar of it.

Now let us get something done for California, and do it right away. Let us commence on the Salinas Valley for here is the largest tract of semi-arid land in one body in our state. They have 400,000 acres of land between Salinas and Bradley. This land has today a nominal value of about $25 per acre, and with irrigation it is worth six to ten times that sum. No one need tell me that they have no water, or that the project is not feasible or that the land is held by large land owners.

What has probably misled the people was the belief that the so-called Oregon-California and Arizona-California enterprises were joint California projects and that as much money was spent for our own state as for the states of Oregon or Arizona, but in fact we got practically nothing from either, and I protest against these projects being paraded before the people as California enterprises, for they are not. I have been all over Southern California and they have a half million acres down there too costly for private enterprise, but capable of irrigating by means of storage reservoirs which our government can build. Two big projects are now due us, and the people down there should have one of them, for they deserve it, and will get one of them if they go after it.

320-ACRE HOMESTEADS.

The enlarged homestead law permits the entry by one person of 320 acres of government land in the arid states which is not, in the understanding of the government, susceptible of irrigation. As under the original 160-acre homestead law, this land can be acquired by the settler from Uncle Sam free of cost, on compliance with the regulations requiring a residence and cultivation. The determination of what lands are subject to these double-sized homesteads devolves upon the secretary of the interior, and since the passage of the act in February, 1909, 190,254,495 acres have been designated by him as subject to entry in units of 320 acres. Every month additional lands are thus designated, 90,242 acres having been added to the total in June.

OLIVE PICKLING.

(Continued from Page 483.)

try them every two hours and do not forget to draw off the solution and pour it back at each examination.

Freshening.

The olives are freshened in water to remove the lye. I throw a handful of salt into this water as it costs little and makes the matter safe. The salt water can be used to flush the drains out or on the asparagus bed to advantage. The exact length of time that it requires to make the pickle depends on the temperature. When the pickling is done in the packing-house cellars it takes a shorter time than when it is done on the packing-house porches. The cold air at night makes quite a difference in the temperature of the water. As soon as the lye is out of the olives we begin to salt them, using first three pounds of salt to the hundred pounds of water. Leave this on two days, then draw off and put on a six per cent, then an eight per cent. Some go farther and put on a solution as strong as twelve per cent. We do not like that much salt on ours. The last strength solution of brine should be boiled and cooled, and the olives washed by running cold water over them and the casks intended to hold them should be made thoroughly clean. Examine the olives, and any bruised fruit should be put into a bucket by itself for immediate use. After that the brine should be watched and in six weeks taken off and boiled again to be sure they are keeping.

Canning.

The simplest way to make olives keep is to can them. They stand cooking as well as any other fruit and are not at all hurt by it. In a small way use either tin cans or glass jars, wash and put in the berries by hand carefully, then fill the jars with boiled brine. The ten per cent solution is the one used commercially; we use eight. That is a matter of detail. Boil the brine the day before; skim it clean, and after filling the jars stand them up to their tops in a boiler of water and when the water around the olives in the jars has come to a good boil seal them up. We unearthed some over at the packing house that were over ten years old and found them perfectly good.

Others.

There are several other ways of fixing olives that make a pleasant change. The salted olives may be pitted and filled with thickened tomato catsup mixed with chopped red peppers. We had a Spanish cook who used to take a clove of garlic, add it to a gallon of olive oil, a little salt and one red pepper. He would then heat this up hot and pour over the olives in the glass jars, then seal them up. Everyone who ate of these olives after they were drained from the oil enjoyed them. The olive oil came into use for salads afterwards.

Dried.

The olive is liked by the Italians when dried. I confess I never have cared for them, as the bitterness is latent and raises up at the last in mighty power to put a disagreeable taste into the mouth.

An old French friend of ours makes the olives into candies just by taking them from the brine and pouring over them a heavy syrup made by using a quart of glucose to five pounds of sugar, pouring it over the olives while warm and letting them stand in it in open pans for forty-eight hours, then repeating the boiling of the syrup. The mingling of the salt and sugar gives a Chinese-like confection. After the syrup is well into the olives they can be put into jars and when wanted for use are served by rolling them in soft sugar and putting them on white paper above the stove in the dish rack where they dry out enough to be eaten without daubing the fingers.

In Gravies and Sandwiches.

I trust the time will come when we will make more and more use of olives. They are useful as an addition to duck gravy, and as a garnish and touch of flavoring to many dishes seem unknown to the average cook. Try making a sandwich by melting cheese in milk and adding chopped olives to it, flavoring with a little Worcestershire. Let this harden in a dish and then spread it lightly on one slice of thin rye or graham bread. The other slice of white bread butter lightly and lay on top.—M. E. Sherman.

NEW MOTORCYCLE FIELD.

While the motorcycle has made a great name for itself as a racing and commercial vehicle, it now comes to the front in Indiana and Kansas as a factor in education. In these two states it has been adopted by two students as a means of covering several miles of road between their homes and the school at least twice a day.

Having been adopted by the students the motorcycle is now in use by both student and college. The University of Illinois at Champaign, was the first educational institution to adopt it for the use of the students in the department of geology and the four machines have been in great demand for research purposes.

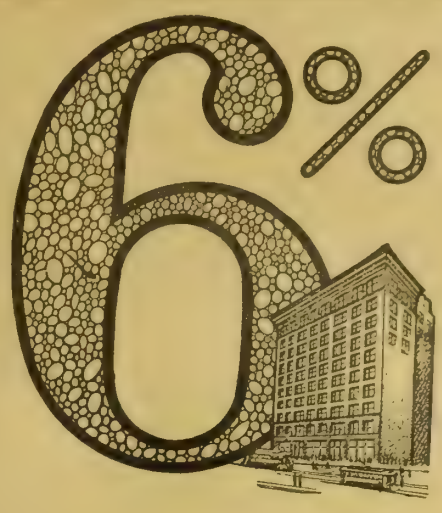
Thirty miles a day on a motorcycle to attend school is the feat being performed by Karl Dalrymple of Selina, Kansas. For two weeks he has been making the trip and has been so successful that he intends to keep up the daily trip during the winter unless the heavy snows blockade the road.

Students in several of the large universities of the country have adopted motorcycles to go from the college buildings to the city and to their homes.

OUR SUBMERGED RICHES.

Mr. M. O. Leighton, in the World's Work for November, says that the sum of all the unreclaimed land in the various states is 74,000,000 acres, and he figures out interestingly the amount of income that isn't coming in.

Swamp land that will not make a gross return of $50 per acre annually is very poor. Seventy-four million acres at that rate will yield $3,700,000,000. Reduce this figure one-half if you please, and what an addition we should still have to our annual wealth production!



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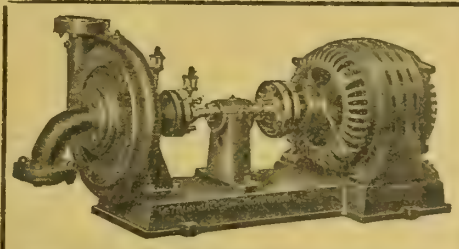

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CHRISTMAS SHOPPING

Less than a month will elapse before Christmas shopping should all be done. We recall distinctly the few days preceding Christmas last year and the year before that and all other years since memory began, and Christmas shopping has always been the same. The awful rush of the few last days and the impossibility of getting proper attention from clerks and shopkeepers should impel everyone to consider what he wishes to buy at this time and have it in hand within the next few days.

TWO FARMS.

We recently saw the statement, "Every good farmer has two farms, the real and the ideal." It is possible some combine the real and the ideal, that is, they have what they maintain is their ideal of a farm. If there be such a case, the ideal is altogether too low. None of us have attained our ideals if they are what they should be. The aspiration should be higher than is possible for a human to attain, yet not so high that there is no hope of ever coming within reasonable distance of it. If our ideal has been low and we have reached it, a new one should be created.

MAKING RAIN

The farmers of a certain section of the west side of the San Joaquin Valley are showing themselves easy marks again for the so-called rainmaker who is signing up a sufficient number of farmers to provide him a good fat year's salary in case he "produces" ten inches of rain between November 1st and May 1st. Last year's rainfall in that section was 13.81 inches, and it is probable the rain will be "produced" and that the gullible farmers will again dig up the $2000 or $3000, or whatever the sum may be, and donate it to this fellow who sits waiting for the season to end.

POULTRY SPECIAL

The December number of the Rural Californian will be a record breaker. That popular monthly has been giving special attention to sugar beets, to cotton, and to apples in the past few numbers, and the issue for December will touch the biggest small industry in the United States, an industry for which its friends are now claiming a round billion of dollars every year. Yet it has been regarded as the smallest factor of our productive industries; it is more often a side issue in which the wastes of the kitchen are concerned than it is a commercial venture. But in its smallness it has become great and the poultry people are today talking of vastly bigger things for the future. Some of these points will be touched upon in the Rural Californian. It will be worth getting.

PERCHERON SOCIETY.

The Percheron Society of America is now sending out its official list of members, complete up to October 13th. In it California does not make so bad a showing, having 22 members. Of course that looks small compared with Illinois' almost 1000. Iowa comes in with 660, Ohio with 374, Kansas 253, and on down to the small eastern states like Delaware, Arkansas, New Hampshire, and others, with only one breeder each. The Percheron Society is now regarded as one of the strongest record associations. It has been attacked by friends of the former Percheron societies which maintained for years a hard struggle for existence, who regarded with dismay the rapid growth in membership of this organization. The directors are now asking every member to keep up records of their stock and post the central organization as to all doings among Percheron people.

DEMONSTRATION TRAIN

The Southern Pacific and University of California demonstration train is now working up the eastern side and down the western side of the Sacramento Valley. It started on Monday from Sacramento and will Sunday at Montague, touching during the next week at Gazelle, Edgewood, Corning, Hamilton, Orland, Germantown, Willows, Maxwell, Williams, Arbuckle, Dunnigan, Yolo and Woodland. It will later visit the southern end of the Sacramento, and the northern end of the San Joaquin will be taken in another trip, and we presume later the southern San Joaquin. In the spring months two trips will be made in Southern California and one up the coast.

This demonstration is well worth a visit from every producer in the section through which it travels. We believe that attendance of school children is to be discouraged and only producers are invited to come. While there is much of interest to school children it has been found that they interfere seriously with the gathering of information by those who come to the train for its educational value.

NUMBER OF ANIMALS.

The Department of Commerce and Labor is mailing its preliminary statement as to live stock on the farms of the United States. It shows the total valuation of cattle to be $1,484,889,647. This was an increase of .7 per cent over valuation by the census of 1900. Horses and colts showed an increase of 131.6 per cent during the same period. Mules and mule colts showed a still greater increase, 166.2 per cent. Even asses and burros show an increase of 125.3. The next greatest increase was in goats, 82 per cent. Poultry comes next with 78 per cent, then come swine with 71. Bees little more than hold their own with an increase of 1.9 per cent. This shows cattle to maintain the lowest rate of increase of any livestock, but it does show, slight as it is, that there has been an increase. This is contrary to the claim often made that the livestock industry has decreased during the ten years. In proportion to population this may be true. The increase in horses and mules is somewhat surprising in the face of the claim often made that motor vehicles would in time cause their complete disappearance. It does not look as if the horse had been materially affected by the coming of the motor as yet.

CORN IN CALIFORNIA

A Los Angeles County subscriber, Mrs. T. Silver of El Monte, recently brought to the office ears of corn which, while they might not win $1000 gold cups, yet are good enough to show that there are possibilities in this state for corn production. One good judge of corn examined them and stated that while the cob was a little large it was an excellent product. With the state importing millions of dollars worth of corn, there is no reason why we should not develop the industry. It is probable that the state can never become a great corn exporter, but it should at least produce enough for home consumption. Our climate is not perfectly adapted to most varieties which have been tested here, but there are other varieties and there are intelligent growers, and the search for a corn which will do well here should be continued.

We are glad to note that Circular No. 70, "Observations on the Status of Corn Growing in California," is now being mailed by the Agricultural Experiment Station at Berkeley. It is written by M. E. Sherwin. One of the first sentences in the Bulletin is: "The yield per acre in California is 34.81 or 9.3 bushels more than the average of the entire United States, moreover the farm value per acre is more than double that of the general average of the states." Then Mr. Sherwin asks the question, "Why is the acreage grown in California not greater?" The acreage now is 49,000 and the production, 1,838,000 bushels, valued at California prices at $1,470,000. The Bulletin is full of corn information and deals with the various problems from planting to treating the corn worm and use of husks for tamale wrappers.

STATE NURSERYMEN

Next Thursday, November 23rd, California nurserymen will convene at the Chamber of Commerce Building in Los Angeles and discuss matters pertaining to the nursery industry of this state. This will be the first regular meeting since the organization of this body at San Jose last June. At that time the Pacific Coast Nurserymens Association was meeting in that city, and the large number of Californians brought together because of it gave opportunity to take the first steps in organization. Geo. C. Roeding, President of the Coast Association, called the Californians together, commitees were appointed, officers elected and a constitution adopted. The President is W. V. Eberly and the Secretary is H. W. Kruckeberg.

At the meeting next week Thomas Chisholm will extend the welcome, Mr. Roeding will respond and President Eberly will make the opening address. Mr. Eberly has a reputation as a wonderful doer of things, but rather short on speech making, but on this occasion the boys are expecting a treat. President P. A. Dix of the Coast Association will make an address on organization and fellowship. This and all other addresses will be followed by short discussions. Other addresses will be "Buying and Selling Among Nurserymen," Fred H. Howard, of Los Angeles; "The Problem of Surplus Stock," Max Crow, Gilroy; "Credits in in the Nursery Business," Leonard Coates, Morganhill; "Growing Ornamentals that Sell," E. H. Rust, South Pasadena; "Conifers That do Well in California," J. J. Reeves, Beverly; "Novelties of Twenty-Five Years in California," John Vallance, Oakland; "Correct Nomenclature in Catalogue Making," Ernest Braunton, Los Angeles; "Federal Quarantine," Frederick Maskew, Los Angeles; "State and County Quarantine," Wm. Wood, Whittier; "Can Nurserymen Assist Inspection," F. H. Wilson, Dinuba; "Are We in the Tropical Fruit Zone," John S. Armstrong, Ontario; "California's Plant Debt to Australia," Theodore Payne, Los Angeles; "Exhibiting a Business Proposition," Philip D. Wilson; "Regulation and Stability of Prices," W. P. Weber, San Fernando; "California Field Grown Roses," E. Gill, West Berkeley.

Agricultural News Notes of the Pacific Coast

Northern California

Fresh grape shipping stil continues.

Ferndale held a pure food and fashion show last week.

Extensive levee work is being done in district No. 108, Sutter County.

The rice crop on the Balfour-Guthrie Ranch near Gridley is being harvested.

Santa Clara County Grange held its annual meeting at San Jose last week.

A rain of from a quarter to half an inch fell in parts of the valley last week.

Commissioner Galloway of Sonoma County reports nurseries generally clean.

Northern California has 12,000 cars of deciduous fresh fruits to its credit as the shipment of the season.

Ferndale, Humboldt County, is planning for a celebration in honor of the opening of its fine new bridge.

Oranges, olives and poultry are to combine in a great exposition to be held in Oroville early in December.

Fairoaks, Sacramento County, is shipping pomelos to Manila. The fruit is handled by the Fruit Growers Exchange.

Santa Rosa people are making extensive preparations for entertaining attendants at the State Fruit Growers Convention.

It is reported that a government experiment farm is to be established somewhere in the delta region of the Sacramento River.

Butte County's foothills are said to be full of both brown and black bears and many are being sent into the San Francisco markets.

A Colusa County fruit grower received from his two acres of prunes $825, and from one season's fig crop from one acre, $320.

A Contra Costa County dairyman has purchased a large tract and will establish a model dairy farm at Meridian, Sutter County.

Haywards is having experience with a chicken thief and he is having experience with Haywards, for they now have him behind the bars.

The demonstration train is touring up the eastern side of the Sacramento Valley this week, and will make the down trip on the western side next week.

The large classes attending the horticultural and entomological short courses at the University Farm are finding much of interest in the course as laid out this year.

The new Deciduous Fruit Growers League is rapidly assuming form and it is hoped will be as much of a factor in advancing deciduous interests as is the citrus league.

Extensive irrigation plans are perfecting for Contra Costa County to cover lands near Martinez, Antioch, Concord, Walnut Creek, Byron, Oakley, and other points.

The supervisor and rangers of the Plumas National Forest are jubilant over their fire record for the past season. They claim that less than one-sixth of one per cent of the total area of forest in their charge was burned over this season. There were, however, 70 fires discovered, most of which were put out before doing any damage.

Central California

Salinas boosters are working for a starch factory.

The Chamber of Commerce of Salinas is working for a vegetable cannery.

Fresno has entered the field as a candidate for the 1915 Irrigation Congress.

Fresno is testing out a new stump-pulling machine which is claimed to be a marvel.

Several sections of Central California are much torn up over location of the state highway.

H. R. Cox of the Bureau of Plant Industry is investigating the weed situation near Salinas.

A Porterville fruit packer has invented a box labeller capable of doing 3000 boxes an hour.

One fruit shipping firm at Hanford, Kings County, sent out during the last green fruit season over 150 cars of fruit.

Every packing house in Porterville is busy, some of the earlier shipments going to Canada, England, and even to the continent.

Five thousand loaves of bread will be distributed by the Raisin Day Committee at the Omaha Land Show. They will be 4-ounce loaves.

The raisin market is reported as exceptionally strong and this notwithstanding the desperate effort of packers to bear the market.

The raisin market having strengthened materially in eastern points, growers who have not sold are holding for the top of the market.

Stock growers of Tulare County are pressing the demand for increasing number of stock allowed on the Sequoia Forest from 11,000 to 12,000.

Kings County Holstein-Friesian breeders are uniting in forming a breeders association to affiliate with the recently formed state association.

Owing to criticism of the Pajaro Valley pack by Chicago dealers it is urged that an organization be formed looking toward more uniform fruit and packing.

Plans for a new weir are being made by the Empire Investment Company, to be located in Kings River southwest of Stratford. It will divert water for West Side lands.

Poultrymen at the Stockton Poultry Show last week were greatly pleased at the fine showing of silver cups which was made. It is estimated that over $1000 worth of cups was taken away.

Irrigators at Modesto last week made a strong appeal to Governor Johnson for a special session of the state legislature to consider amendments strengthening the bond irrigation act.

Congressman Needham recently held a conference with farmers at Stockton regarding losses from flood waters of the San Joaquin. It is urged that congress aid in draining away these flood waters.

Shima, the Jap potato grower, who raises thousands of sacks on the rich lands near Stockton, says that his success with potatoes has been largely through seed selection and growing a superior potato.

Southern California

San Diego County public schools are teaching the art of poultry raising.

The Palo Verde Valley in Eastern Riverside County, is building a cotton gin.

Orange County citrus growers have decided to send out no Thanksgiving oranges.

Anaheim has taken up the shipping of walnuts to Europe. This is truly carrying coals to Newcastle.

The upper Yucaipa and Oak Glen country will market during the coming season about 75,000 highest grade apples.

One of the uinversal fiber gins for handling long staple cotton is to be constructed at Brawley, Imperial County.

The Growers Protective Association of West Riverside met and discussed matters pertaining to their industry last week.

Thirty-five cars of sheep were recently sent to Holtville, Imperial County. This was the second bunch in two weeks.

Horticultural Commissioner S. A. Pease of San Bernardino County, reports many calls for remedies for gum disease of citrus trees.

El Centro is making great preparation for its coming county fair. One day of the week will be set aside to each town of the Valley.

The California Creamery Operators Association will convene November 24-25 at San Luis Obispo. F. H. Daniels of Alameda is secretary.

The Palo Verde Valley is objecting to the bad road from Glamis to Blythe and now proposes to open a fine roadway to the Santa Fe on the north.

G. Harold Powell of the Citrus Protective League is on his way to Washington to confer with the committee of congress in regard to the lemon tariff.

The packing house of the Anaheim Walnut Association has shipped during the season 475 tons. It has been a prosperous year for the co-operative organization.

The Limoneira Ranch at Santa Paula is making careful observations as to productiveness of certain lemon trees and proposes to keep a record for a period of years.

The horticultural commissioner of San Bernardino County has been appealed to for inspectors for the apple district along the Mojave River. As yet it has not been deemed advisable.

Anaheim walnut growers have had trouble with walnut thieves during the season and now have a gang of Mexicans behind the bars for stealing walnuts, sometimes carrying off whole sacks.

The Redlands Co-operative Fruit Association is securing new membership and signing up many additional acres. The new officers for the coming year are Mr. Gore, President, and H. W. Seager, Secretary.

The Imperial Valley will require 1500 kegs of nails, 50,000,000 wrappers and 1,000,000 crates to accommodate its cantaloupe crop next season. It is estimated that next season's crop will require 2500 refrigerator cars to handle.

The Coast

Eggs at Seattle, Wash., are selling for 50 cents.

Potatoes are now selling for $25 per ton in the Seattle market.

Tacoma received 2270 cars of wheat during the month of September.

A convention of dairymen was held at Kennewick, Washington, last week.

The Yuma Valley is now sending cars of fat hogs to the Los Angeles market.

Farmers at Garfield, Washington, are entering more generally into pork raising.

Wenatchee, Washington, shipped 1500 cars of fresh fruit during the past season.

A potato grower at Enterprise, Oregon, reports 914 sacks of potatoes from ten acres.

Cattle growers are offering $30 per head for yearlings on the ranges at Pendleton, Oregon.

The price of hogs at the stockyards at Portland has declined until now $7.25 it top notch.

Wheat buyers at Portland, Oregon, are playing a waiting game, offering only 79 to 80 cents for Club.

Spokane hopes to have Governor Judson Harmon of Ohio to open its apple show on November 23rd.

Churchill County, Nevada, sent a special car of agricultural products to the Land Show at Chicago.

High prices of barley in California are causing more general shipment of Washington oats to that state.

Oregon has a new irrigation law which it is expected will soon be tested out in the supreme court.

The Asotin County Poultry Association will hold its annual show at Clarkston, Wash., early in December.

Yakima apple growers are elated over winnings of Yakima Valley apples at the New York Land Exposition.

The Agricultural College at Bozeman, Montana, will send a judging team to the International at Chicago.

A great snow storm swept over the eastern portion of Washington last week, but soon disappeared in a rain.

Officers of the reclamation service recently made a visit to the Laguna Dam across the Colorado above Yuma on inspection trip.

A deal was closed at Portland, Oregon, last week by which 2500 bales of California, Oregon and Washington hops go to London.

The pupils of Snohomish, Washington, High School recently won the Great Northern Live Stock Cup for judging stock at Puyallup Valley Fair.

Bean growers at Kendrick, Idaho, have been so successful this past season that another year will see great extension of bean planting in the Potlatch section.

Potato growers at Waterville, Washington, held a combination potato and baby show last week. The potatoes were given a $50 prize, but this was greater than the baby prize.

The state school superintendent of Washington has agreed to join in the anti-smut campaign which wheat growers of that state are making. He will distribute to all teachers circulars touching upon the scientific and practical side of the smut question.

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COLORING.

By Mrs. M. E. Sherman.

The Fresno Fair has passed, and the winning cow in the butter contest was entered as a red Friesian. The Shorthorn judge looked over the cows and asked me if the Friesian breed of cows did not look very much like the first cross of a Holstein bull on a good milking Shorthorn. The type was purely Shorthorn. The Jerseys of Mr. Locke were very beautiful animals. I wish all Jersey men could see these cows, as they are true to type. I was glad to see them come out as well as they did in the butter contest. They were in the noise and confusion all the time, and this is, of course, a poor way to make big records. The cows in the East that are making big records are treated like patients taking a rest cure. They have a light screened house to live in, apart from the populace of the barnyard. They are brushed and groomed, in other words are massaged, in the pink of condition, and fed every few hours, each time with something tempting. One man milks them and cares for them, giving his entire time to it. If it is in summer, an electric fan and a darkened room tend to slumber and rest. In winter, a well warmed room with warmed drinking water is in use. Everything is kept quiet and peaceful in their apartment. These fair records require a cow with little nervous organization to go through them successfully.

Two Fairs.

While the Fresno Fair was much the larger, the Hanford Fair was more like the fairs of years ago. It was straight argicultural, without the vaudeville. Both fairs had a beautiful ring of saddle horses that tiptoed around full of the poetry of motion. The women on saddle horses as usual had stiff animals that did not seem to have the springs under them. I cannot understand why women should not ride the beautiful trained horses. Their manners are perfectly good, and I would always rather trust a horse with spirit than a lunky animal. I had a friend that bought a horse on the recommendation that Sam was fit for women to drive, as he was so gentle that he would stand on the track if a train struck him. He did this very thing one day when a flying box car came. Sam could not wake up. Fortunately the rear wheels only were struck, as the car came to a stop under breaks. I don't want such a horse. I want one that will see things and get out of their way when they come too close.

Cow Colors.

It is not always easy to tell why we know the breed of a cow at sight, and the colors may vary considerably in the same cow at times. Registered Ayrshires are handsome animals, having horns that are carried up and forward, and are longer and more slender than Holstein or Jersey horns. The handsomest Ayrshire markings are the nearly white ones with red side panels on the neck and cheeks, and a few red spots or red roan spots on their sides. The head is carried high and the cows are alert looking animals. Other colors are nearly all dark red or with some white; then there are red brindled with black. The type of cows known to the Eastern farmer as "Homies" are low set in their bodies with great roomy stomachs. The old Eastern ideal of a farm is to have a good cow, for they say, "No cow, no home." This would not apply in the West, for many a home has only a tin cow, and yet the love that makes any spot a home is there.

Guernseys and Jerseys.

The Guernsey is red and brown and white, or all these colors mixed. Like the Ayrshire, she may come in other tints to match her mistress' gowns, but these are the colors I have seen her wear. I have not the official book to know exactly what colors are a la mode in her style book. The Guernsey is a little larger and heavier cow than the Jersey. Her special claim, outside of being a heavy producer of butterfat, is in the high color of her milk and butter. A few Guernseys are often kept in a herd to raise the color of the milk. The Jersey colors are the soft pastelle colors, as beautiful and as softly shaded as the light on the brown hillsides, light cream to darkest tan shades, from light silver to silver black. Often the light silver have black trimmings in tail and legs. With the season the coloring varies in intensity. White is often found on these cows as well. The nose is black with a mealy ring around it, while in the Guernsey the white or lighter colored nose is desirable.

Durhams and Holsteins.

In the early days the name Durham was applied to cattle. Then we had the Longhorn and the Shorthorn Durham. Most of the grade cows in California that have good blood behind them are Shorthorns. There are some splendid milkers among them. The colors are red, white and roan, and brindled red. These colors are all permitted in the show ring. The finest of the bulls in this year's show ring have been red roans in the aged classes, with one fine two year old pure white, and several solid red yearlings. The expression in the face of a roan bull that weighed twenty five hundred was as peaceful as a calf with its stomach full of new milk.

The black and white cows are Holsteins. The pure bred ones must have white terminals. Legs must end in white, and the tail must end in white. No gray or red markings are permitted, neither can an animal be registered that is pure white. The blue roans are superior cows usually at the milk pail. These are gotten by mating the Holstein sire with the red roan Shorthorn cow. I have had some that milked eight and nine gallons a day from this crossing.

Dutch Belted.

The Dutch Belted cattle are beautiful cows, as everyone that has seen the Strader herd from Ceres must admit. They stand well in milking contests. Mrs. Strader is a lover of cows and greatly interested in these cattle. The young males sell readily to head herds of grade cows. Some of these grades will probably be as well marked as full bloods. These interesting animals are often confounded with the Holstein. The historians of both breeds argee that they are distinct as

far back as they can be traced. The Dutch Belted are black animals with black legs and tails, but around the center of their bodies is a broad band of pure white. They are picturesque in the green fields, and we hope that there will soon be more herds of them in California.

KEEPING THE CALVES HEALTHY.

One of the most persistent difficulties in calf raising is scours which is frequently caused by injudicious feeding.

The pails used in feeding the calves should have all cracks and corners soldered so that they may be easily cleaned. Thorough scalding is necessary to safeguard the calf. Dirty feed boxes may be another source of contamination.

Probably the most prevalent cause of scours is overfeeding on milk. While some feeders have been successful in feeding sixteen to eighteen pounds of skimmilk daily per calf when the latter is three to four months old, there are others, and among them some of our best dairymen who find it advisable to feed only eight to ten pounds daily per calf, and would certainly not recommend over twelve pounds. The feeding of milk cold or sour, or the feeding of milk sweet one meal and sour the next, are other serious causes of scours. The mixing of the grain with the milk, thus encouraging the calf to gulp it down without proper mastication with the saliva in the mouth, may be a serious cause of trouble.

The grain and roughage given the calf to balance the skimmilk or sudden changes in the feed ration, have much to do with the condition of the calf's alimentary tract. It is difficult to specify just what feeds may or may not be used. Some feeds, laxative in their character, as bran and linseed meal, may be used to advantage, while soy beans are a notable example, which it is difficult to feed to the calf without causing scours. Shelled corn is less likely to cause scours than corn meal. Kafir corn is constipating in its effects.

Feeding the same time each day with the same quantity and quality of milk, has much to do in maintaining a healthful condition of the calf. With this should go the precaution of providing a dry pen, warm and well ventilated in winter and cool in summer. The calf is sensitive and should have kind treatment. The successful calf feeder will watch his calves closely, and at the first signal of scours will cut down the supply of milk; at this time a couple of tablespoons of castor oil in scalded milk may effect a cure. Persistent cases will require more strenuous treatment.—D. H. Otis, Experiment Station, Madison, Wis.

A BIG SALE.

Mr. George A. Smith of Corcoran reports 110 registered Jerseys sold at his recent public sale of pure blood stock. The highest sale was for Gerty's Son 66463 to J. N. Lester for $975. Highest price for a cow was for Victor's Hope to Jersey Queen Farm for $445. Other sales range from that on down to $30 for a three day old calf. Amongst the other purchasers were: Teague's Farm and Dairy Co., I. H. Smith, D. F. Conant, W. N. Snedigar, S. A. Holtman, J. W. De Witt, T. B. Harrison, Charles Odell, N. H. Locke Co., Palm Fruit Co., H. G. Gross, F. E. Thayer, R. L. Waltz, C. A. Pearis, T. W. Cheney, W. J. Webb, Mrs M. A. Musgrave, S. B. Wright, Bresee & Frasier and N. Wolfskill.

RANGE FOR SWINE NECESSARY.

While a few swine can be raised confined in limited quarters, if such quarters are kept clean, they will do better, will keep in better health, and can be grown more cheaply if they have plenty of range for pasture. It is desirable to have the pasture fenced off into suitable areas so that the hogs can be shifted from one pasture to another, not only to provide fresh pasture, but also to afford an opportunity to disinfect the pastures, either by plowing and seeding to a forage crop or by exposure to sun and weather. Nearly all cases of intestinal worms, which are rather common in swine, are contracted from infected ground, and swine can be kept free from these parasites by frequent changes of pas-

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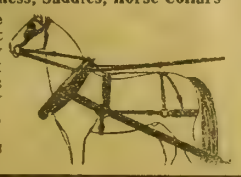

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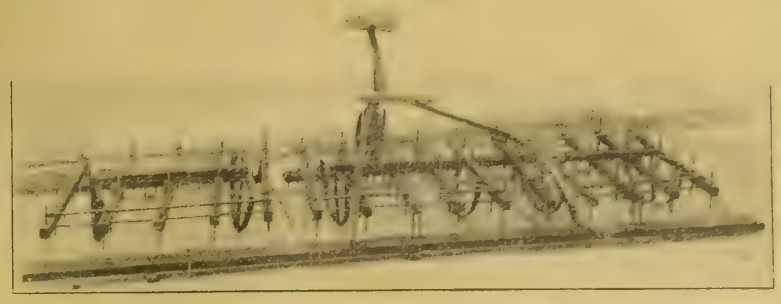

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You can use the teeth from your old harrow, as we can supply the harrow complete without teeth. Holes for the teeth bored to order.

The self-cleaning attachment can be purchased separately and you can attach it to your old harrow. The riding cart can also be purchased separately.

This self-cleaning attachment can also be supplied for traction purposes. It is equally good for light and heavy work.

Any size harrow made to order. Write for prices.

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Alfalfa fed with Steam Dried Beet Pulp will make every one of your cows earn $10 to $20 more a year. Multiply these figures by the number of cows you own and you can safely count the result as your increased profits.

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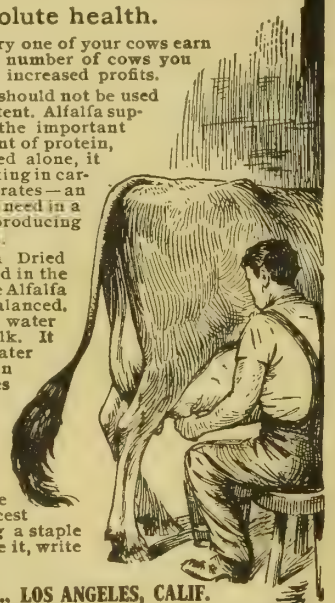

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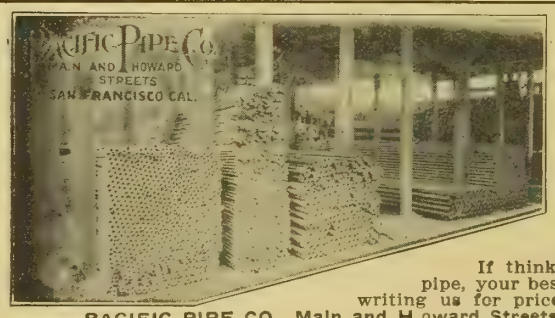

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Cultivator Order Blank

_____ 1911

CULTIVATOR PUBLISHING CO.,

115 No. Broadway, Los Angeles, Cal.

Gentlemen—Enclosed find _____ for which please send the **Cultivator** until January 1st, 1913, to the following:

NAME	P. O. ADDRESS	STATE

SIGNED _____

ADDRESS _____

THE HOME CURING OF HAM.

There is no other product of the farm to which the owner points with greater pride, than to his abundance of well-cured hams, one of the daily essentials for the table, and if the ham is well cured and well cooked, we certainly have one of the most appetizing dishes which can be placed before us.

This edible need not be limited to the farmer alone; those of the city may enjoy, equally with him, by purcasing the slaughtered hogs, or hams of the butchers, then using a good method of "sugar curing."

It is economy to those in the city, and a profit to the farmer should he place his home-cured hams on the market; there is always a ready sale, and they bring much better price than the packer's meat or the ordinary salt ham.

Should we decide to market our own "homemade," "sugar-cured" hams, there would be a very great demand for them. Each year we are compelled to refuse a number of would-be purchasers.

To all interested in the sugar-cured method of preparing it, we give the following recipe:

For 1000 pounds of meat, take 40 lbs. of common salt, 10 lbs. Orleans sugar, 4 lbs. black pepper, 3 lbs. saltpeter, ½ lb. Cayenne pepper. Mix thoroughly, then rub one-half of the mixture on the meat, let it lie two weeks and then rub on the remainder, after which let it lie four weeks, then hang and smoke.

As soon as the animal heat is out of the meat, apply first half, carefully covering skin and flesh side alike, and well over hock bone.

The extra expense over salted meat is small and I think about equals other methods of curing; the amount of labor required for first application is very little more than ordinary salting, and for second, requires one man about one hour. If you wish to cure smaller quantities, time and labor will be in proportion.

Do not think the quantity of the preparation too small when mixed, for although it may look so, yet it is an abundance.

As this is put on the meat, each ham is placed separately upon a platform, there to await the second application, when it is again placed for the four weeks, after which we hang and smoke four days from wood fire, not being partial to hickory wood.

By this time the meat is firm and dry, and it is wrapped in newspapers, then placed in sacks made of denim, or rather strong material, and hung in a cool, dark place.

We have used this recipe for fifteen years, have never had a ham spoil and have never eaten better.—Farm World.

THE MOST UNIQUE BANQUET EVER HELD.

One of the largest and most important meetings of livestock men will be that of the Second Annual Meeting of the Northwest Angora Goat Association, which will be held at Dallas, Ore., January 3-4-5.

The membership of the association in point of numbers is perhaps the largest in the West, it having members in every state in the West and in many of the Eastern states. The Mohair industry of the Northwest has grown in the last few years to that of one of the leading pursuits of the Northwest farmer. The endless tracts of cheap lands are being utilized more and more each year in the raising of Mohair goats, and it may be said to be the most profitable of all the branches of the livestock industry, owing to the comparative cheapness of the lands over which they run. Being browsers, they serve a dual purpose—clearing the lands of brush and weeds, and in the production of mohair, an ever staple article.

Figures submitted by Secretary Alva L. McDonald show that there was produced in the West in the year 1911 nearly a half million pounds of first class mohair, which sold for approximately $150,000. The present profitable condition of the Angora goat business causes the breeders to feel in a very optimistic humor, and consequently great plans are being worked out for the annual show. There will be over $1,200 in cash premiums and prizes, besides many valuable and costly specials.

The Dallas Commercial Club has donated about $500, while the association will offer some fine premiums which it is expected will arouse keen rivalry among the breeders. One of the most important features will be an "Angora venison banquet" given by the Dallas Commercial Club to the members of the association, in which the chief course will be roast Angora kid. It is claimed that this is the first of its kind ever given, and the large banquet hall of the New Scott Hotel will undoubtedly be crowded.

Governor West of Oregon will be present, as will also Dr. James Withycombe of the Oregon Experiment Station and C. C. Chapman of the Oregon Development League, while other speakers have been invited and are expected. The railroads have granted special excursion rates from all points in the Northwest, while the Southern Pacific will grant half fare on all shipments of livestock. W. A. Ayres will have charge of the stock exhibit, and will mail out premium lists at once. For railroad rates, reservations, etc., those desiring to go should address the secretary, Alva L. McDonald, Hamilton Building, Portland, Ore.

THE INTERNATIONAL.

Preparation for the International Live Stock Exposition, which will this year be held at Chicago from December 2 to 9, is no insignificant task. Hundreds of artisans consume a month or more in carrying out plans laid down long previously. Material by the trainload is consumed, and each year finds new ideas adopted for the benefit of show men and the comfort of visitors. In these preliminaries thousands of dollars are expended, practically all of which is merely seasonable investment.

On the eve of the opening of the exposition interest was never as keen. All over the country a host of exhibitors are getting livestock into show condition. Breeding and fat stock is receiving finishing touches at the hands of the master fitters and feeders of the country, loading day being anxiously awaited. The public sees only the culmination of this titanic effort.

You need this wisdom and experience. It will help you to be a better farmer and a better stock raiser. You cannot reap unless you sow; you cannot make progress unless you know. Know more and you earn more. Exchange small profits for larger profits. Get up a few rungs on the ladder of success. Become a breeder and raiser of good livestock. Many of the exhibiting prize winners at the "International" last year got their knowledge and inspiration but a few years ago, at the great show that is now willing to recognize and reward their efforts.

The International is your opportunity; it is your great chance to develop by applying practical knowledge and methods with a certainty of practical results.

Profit in the Poultry Yard

Practical poultry people who may have ideas from their experience as to methods of feeding and housing and general care of poultry will confer a favor upon the Cultivator and its circle of readers by sending in concise accounts. Mrs. Basley is always willing to answer queries, which with the experience of others should make this a most valuable feature in poultry life on the Coast. Opinions or matters of a personal nature should be omitted, but a concise statement of facts is always valuable.

THE STOCKTON SHOW.

The Stockton boys feel very proud of the results of their efforts in the show line. There were 1000 entries in the poultry classes, 600 in the pigeon classes, and the claim is freely made that it was the biggest ever in that part of the state. In pigeons there were over 38 varieties with over 100 colors and markings and the exhibits came all the way from Los Angeles to Seattle. In the poultry practically every class was well filled. The immense tent gave abundance of light and room and a most comfortable place for the exhibition. In addition a commodious hall across the street gave opportunity for the lectures which were delivered each afternoon. The principal lectures were by Mrs. Basley, Mr. McIntosh and Mr. Hitchcock.

One feature of the show was the releasing of homer pigeons with a message from the mayor of Stockton to the mayor of Oakland. In it the Stockton mayor said: "Stockton, at the present time, is holding one of the largest and best poultry shows ever held in the West, and as mayor I herewith extend to you and the citizens of Oakland a hearty and cordial invitation to come to our city and be our guest at this time."

The awards were:

AMERICAN.

Silver Wyandottes—Ckl, 1, E. B. Neilson, 2, 3, Mrs. Lucy Worth; hen, 1, E. B. Neilson; pullet, 1, E. B. Neilson; 2, Mrs. Lucy Worth.

White Wyandottes—Pen, 1, A. L. Jenkins; ck, 1, A. L. Jenkins; 2, Jessie A. Griffin; 3, A. L. Jenkins; ckl, 1, A. L. Jenkins; 2, Jessie A. Griffin; 3, A. L. Jenkins; hen, 1, A. L. Jenkins; 2, Jessie A. Griffin; 3, A. L. Jenkins; pullets, 1, 2, A. L. Jenkins; 3, Jessie A. Griffin.

Single Comb Rhode Island Reds—Pen, 1, W. E. Gibson; 2, William H. Hirsh; 3, W. E. Gibson; ck, 1, W. E. Gibson; 2, J. H. Crow; 3, William H. Hirsh; ckl, 1, J. L. Harrison; 2, W. E. Gibson; 3, William H. Hirsh; hens, 1, 2, W. H. Hirsh; 3, Jack Lee; pullet, 1, 2, J. L. Harrison; 3, William H. Hirsh.

Rose Comb Rhode Island Reds—Ck, 1, William H. Hirsh; 2, Jack Lee; ckl, 1, Jack Lee; pen, 1, 2, 3, William H. Hirsh.

Buckeyes—All awards to William H. Hirsh.

White Plymouth Rocks—Pen, 1, A. W. Cowell; ckl, 1, Mrs. H. B. Foster; 2, Guy H. Miller; 3, J. F. Dentoni; hen, 1, 2, J. F. Dentoni; 3, Guy H. Miller; pullet, 1, 2, Mrs. H. B. Foster; 3, J. F. Dentoni.

Barred Plymouth Rocks—Pen, 1, B. F. Keeney; 2, Eugene P. Sabin; 3, D. T. Weiland; ck, 1, D. T. Weiland; 2, M. W. Bessac; 3, Dan Klench; hen, 1, B. F. Keeney; 2, 3, Eugene P. Sabin; pullet, 1, 2, 3, B. F. Keeney.

Partridge Plymouth Rocks—Pen, 1, F. E. Holmes; ckl, 1, W. H. Kelley; 2, Robert V. Moore; 3, F. E. Holmes; hen, 1, 2, W. H. Kelley; pullet, 1, W. H. Kelley; 2, Robert V. Moore.

American Dominique—All awards to Elias Gallup.

ENGLISH.

Black Orpingtons—Pen, 1, Marshall Black; ck, 1, J. E. Pearson; 2, Marshall Black; 3, Twin Oaks Farm; ckl, 1, 2, 3, Marshall Black; hen, 1, 2, J. E. Pearson; 3, Marshall Black; pullet, 1, 2, 3, Marshall Black.

Buff Orpingtons—Pen, 1, Twin Oaks Farm; 2, Mrs. C. M. Smythe; 3, W. S. Macy; ck, 1, Goodacre Bros.; 2, Twin Oaks Farm; 3, Mrs. M. E. Plaw; ckl, 1, Twin Oaks Farm; 2, C. A. Latham, 3, W. S. Macy; hen, 1, 2, Twin Oaks Farm; pullet, 1, W. S. Macy; 2, Twin Oaks Farm; 3, W. S. Macy.

White Orpingtons—Pen, 1, Twin Oaks Farm; 2, Stewart & Kimble; 3, Schuchard; ck, 1, Stewart & Kimble; 2, 3, Twin Oaks Farm; ckl, 1, 2, 3, Twin Oaks Farm; hen, 1, 2, 3, Twin Oaks Farm; pullet, 1, 2, 3, Twin Oaks Farm.

Partridge Orpingtons—All awards to Goodacre Bros.

MEDITERRANEAN.

Blue Andalusians—Pen, 1, 2, J. W. Santos; 3, Albert O. Horning; ck, 1, J. Hildreth Crow; 2, J. W. Santos; 3, Albert O. Horning; ckl, 1, J. W. Santos; 2, J. H. Crow; hen, 1, 2, J. H. Crow; 3, J. W. Santos; pullet, 1, W. H. Kelley; 2, J. W. Santos; 3, J. H. Crow.

Black Minorcas—Pen, 1, A. W. Cowell; ck, 1, W. Poppelwell; 2, W. A. French; 3, A. W. Cowell; ckl, 1, Mrs. William Bond; 2, A. W. Cowell; 3, C. C. Bonell; hen, 1, Mrs. R. S. Spalding; 2, W. A. French; 3, Mrs. Spalding; pullet, 1, 2, C. C. Bonell; 3, A. W. Cowell.

Buff Minorcas—Ck, 1, Lindgren Bros.; 2, Mrs. R. J. Quinn; ckl, 1, Lindgren Bros.; 2, 3, Mrs. I. H. Tuttle; hen, 1, 2, Lindgren Bros.; 3, Ozias E. Palmer; pullet, 1, 2, 3, Mrs. I. H. Tuttle.

White Minorcas — Ck, 1, A. W. Cowell; ckl, 1, 2, A. W. Cowell; 3, Albert H. Smith; hen, 1, A. W. Cowell; pullet, 1, Mrs. S. V. Ryland; 2, 3, Albert H. Smith.

Anconas—Pen, 1, W. H. Kelly; cock, 1, Ozias E. Palmer; 2, Goodacre Bros.; 3, W. B. Tretheway; ckl, 1, Mrs. W. H. MacKay; 2, Sydney St. L. Cavill; 3, Goodacre Bros.; hen, 1, 2, Mrs. W. H. MacKay; 3, W. B. Tretheway; pullet, 1, Mrs. MacKay; 2, Goodacre Bros.; 3, Sydney St. L. Cavill.

White Leghorns—Pen, 1, J. H. Brown; 2, H. A. Boye; 3, G. Cunningham; ck, 1, O. B. Morris; 2, 3, J. H Brown; ckl, 1, 2, W. Poppelwell; 3, J. H. Brown; hen, 1, J. H. Brown; 2, 3, O. B. Morris; pullet, 1, 2, Andy M. Lease; 3, O. B. Morris.

Brown Leghorns—Pen, 1, Elias Gallup; 2, O. E. Crawford; 3, William Bond; ck, 1, Andy Lease; 2, William Bond; ckl, 1, Andy Lease; 3, O. E. Crawford; hen, 1, O. E. Crawford; 2, 3, William Bond; pullet, 1, O. E. Crawford.

Buff Leghorns—Pen, 1, Lindgren Bros.; 2, J. J. Hayes; ck, 1, Lindgren Bros.; ckl, 1, 2, Lindgren Bros.; hen, 1, J. J. Hayes; pullet, 1, 2, Lindgren Bros.

Black Leghorns—All awards to Frank Lieginger.

ASIATIC.

White Langshans—Ck, 1, C. E. Ross; ckl, 1, Curtis C. Coffelt; hen, 1, Curtis C. Coffelt; 2, 3, C. E. Ross; pullet, 1, 2, C. E. Ross; 3, Curtis C. Coffelt.

Black Langshans—Pen, 1, J. H. Shirk; ck, 1, J. H. Shirk; 2, 3, C. E. Ross; ckl, 1, J. H. Shirk; 2, 3, C. E. Ross; hen, 1, J. H. Shirk; 2, 3, C. E. Ross; pullet, 1, 2, 3, C. E. Ross.

Buff Cochins—Ck, 1, 2, 3, George T. Ryan; pullet, 1, 2, George Ross; 3, Mrs. Charles Hansen.

Partridge Cochins—Ck, 1, 2, Mrs. J. F. Dentoni; ckl, 1, William W. Hirsch; 2, Mrs. J. F. Dentoni; hen, 1, 2, 3, Mrs. J. F. Dentoni; pullet, 1, Mrs. J. F. Dentoni; 2, 3, William Hirsch.

Light Brahmas—Ck, 1, Sydney St. L. Cavill; 2, J. F. Dentoni; 3, Frank Lieginger; ckl, 1, J. Stanfield; 2, W. A. French; 3, J. F. Dentoni; hen, 1, 2, J. F. Dentoni; 3, J. Stanfield; pullet, 1, J. Stanfield; 2, J. J. Dentoni; 3, W. A. French.

POLISH.

White Crested Black Polish—Ckl, 1, Sidney Cavill; hen, 1, Sidney Cavill.

DUTCH.

Silver Spangled Hamburgs—Ckl, 1, Mrs. W. H. MacKay; pullets, 1, 2, 3, Mrs. W. H. MacKay.

WATER FOWL.

Colored Rouen Ducks—Old drake, 1, W. A. French; 2, Mrs. Thomas Gannon; young drake, 1, 2, W. A. French; 3, Mrs. Thomas Gannon; old duck, 1, W. A. French; 2, Mrs. Thomas Gannon; young duck, 1, W. A. French; 3, Mrs. Thomas Gannon.

Indian Runner Ducks—Old drake, 1, 2, W. C. Baldwin; 3, Oak Grove Poultry Farm; young drake, 1, Mrs. Mary F. Hawley; 2, Mrs. M. V. Peyton; 3, Mrs. M. F. Hawley; old duck, 1, 2, 3, Oak Grove Poultry Farm; young duck, 1, E. S. Abbott; 2, Henry Grupe; 3, Mrs. Lucy Wirth.

Muscovy Ducks—Old drake, 1, Mrs. M. E. Plaw; old duck, 1, Mrs. M. E. Plaw.

White Indian Runner Ducks—Old drake, 1, W. C. Baldwin; young drake, 1, Goodacre Bros.; 2, 3, Mrs. S. V. Ryland; young duck, 1, 2, Goodacre Bros.; 3, W. C. Baldwin.

BANTAMS.

Buff Cochin Bantams—Pen, 1, Henry Hoyt; 2, Asa M. Clark; ck, 1, Ben M. Woodhull; 2, H. R. Noack; 3, F. A. Arnold; ckl, 1, Charles R. Detrick; 2, Henry Hoyt; 3, Ben M. Woodhull; hen, 1, 2, Ben M. Woodhull; 3, H. R. Noack; pullet, 1, H. R. Noack; 2, F. A. Arnold; 3, Ben M. Woodhull.

Black Cochin Bantams—Ck, 1, F. A. Arnold; 2, E. E. Dennison; 3, W. W. Hirsch; ckl, 1, 2, W. W. Hirsch; hen, 1, 2, W. W. Hirsch; pullet, 1, 2, E. E. Dennison; 3, W. W. Hirsch.

White Cochin Bantams—Ck, 1, Henry Hoyt; 2, F. A. Arnold; ckl, 1, Henry Hoyt; hen, 1, Henry Hoyt; pullet, 1, Henry Hoyt; 2, F. A. Arnold.

Golden Sebright Bantams—Pen, 1, W. W. Hirsch; 2, Lawrence A. Werly; 3, Henry Hoyt; ck, 1, 2, 3, W. W. Hirsch; ckl, 1, Henry Hoyt; 2, 3, W. W. Hirsch; hen, 1, 2, 3, W. W. Hirsch; pullet, 1, 2, 3, W. W. Hirsch.

Silver Sebright Bantams—Ck, 1, C. O. Prestin; ckl, 1, 2, W. A. French; pullet, 1, W. A. French.

Light Brahma Bantams—Ck, 1, W. W. Hirsch; hen, 1, 2, W. W. Hirsch.

White Japanese Bantams—W. W. Hirsch, all awards.

Black Tail Japanese Bantams—W. W. Hirsch, all awards.

Black Breasted Red Game Bantams—Pen, 1, Henry Hoyt; ck, 1, Ben Woodhull; 2, Henry Hoyt; 3, J. H. Crow; ckl, 1, Henry Hoyt; 2, Miss Mary Marshall; 3, Ben Woodhull; hen, 1, 2, Henry Hoyt; 3, J. H. Crow; pullet, 1, Henry Hoyt; 2, 3, Ben Woodhull.

White Games — Ck, 1, William Hirsch; 2, H. E. Malby; hen, 1, W. W. Hirsch; 2, H. E. Malby.

MISCELLANEOUS.

White Guinea—Ck, 1, William A. French; hen, 1, William A. French.

Pearl Guinea—Ck, 1, William A. French; 2, 3, W. W. Hirsch; ckl, 1, Miss Margie Gannon; hen, 1, W. A. French; 2, W. W. Hirsch; 3, Miss Margie Gannon; pullet, 1, Miss Margie Gannon.

Silkies—Pen, 1, Mrs. R. S. Spaulding; pullet, 1, 2, Mrs. R. S. Spaulding; 3, Henry Hoyt.

Black Sumatras—Ck, 1, H. E. Malby.

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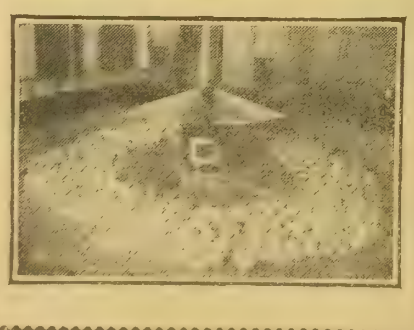

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HATCHING AND REARING TURKEYS BY ARTIFICIAL METHODS.

Notwithstanding the popularity of the turkey for human consumption and its consequent high price, the turkey producers have not been able to supply the demands of the market, due to the fact that turkeys are more subject to diseases than chickens and because the care of the young poults requires much patience on the part of the poultryman. Nevertheless, turkey raising returns a good profit to the producer when properly handled. In Farmers' Bulletin 200 the problems connected with raising turkeys have been outlined and treated more or less in detail.

The results obtained in the following experiment, conducted by the Washington station, on hatching and rearing turkeys by artificial methods should prove of value to those who desire information on the care of young poults.

Setting the Machine.

About the 1st of June we secured 102 turkey eggs of the Mammoth Bronze variety, which nicely filled the tray of our 150-hen-egg incubator. The machine had previously been warmed in the usual way, and at the time the eggs were placed in the tray the thermometer registered 102 degrees. The moisture pan, which was the same size as the tray and located beneath and 2 inches from the tray, was supplied with sand one-half inch in depth, which was thoroughly saturated with warm water. This sand was kept wet enough to show puddles of water on its surface at all times during incubation, by daily applications of water heated 100 degrees to 103 degrees F.

Turning the Eggs.

The eggs were turned over every 12 hours—morning and evening—beginning on the third day after they were placed in the tray and continued until the first sign of hatching, the pipping of the egg. The turning was very carefully done by first removing from the center of the tray about 1 dozen eggs, and then carefully rolling, with the hand, the remaining eggs toward the center of the tray, just enough to change the position of each egg. The eggs that had been removed were then placed in either end of the tray.

Temperature.

During the first week a temperature of 102 degrees was maintained, and afterwards 103 degrees, with but slight variations.

Testing.

On the tenth day the eggs were tested for fertility, 4 clear eggs being found, which, with the 3 that were cracked in transit, left for the machine just 95 eggs. Of these, 4 more were taken out, at the second testing, which occurred on the twentieth day. Thus we had 91 eggs that had stood the test.

Hatching.

The first evidence of hatching occurred on the evening of the twenty-seventh day, and by the evening of the twenty-eighth day the hatch was complete, resulting in 87 poults—4 had died in the shell. The day following the hatch the incubator door was left ajar about one-eighth of an inch, which was increased the second night to one-quarter of an inch. This was done to gradually harden the poults in their preparation for the hover.

Brooding.

During the afternoon of the second day after the hatch the poults were placed in a hover in the brooder house. The hover had been warmed to a temperature of 90 degrees. The poults appeared well and bright. All were placed in one hover, which proved to be a mistake, for the following morning there were several dead ones, caused by the young things deserting the hover and piling up, many of the underneath ones being smothered. About 30 were thus lost in a few hours.

When reared in the natural way and seeking to be hovered, the poults instinctively duck their heads and creep under the mother hen, while she assumes a settling position. The poults having thus assembled they become distributed among the feathers and under the wings of the hen. The warmth from the hen's body satisfies them. They become quiet. Deprived of the mother hen they bunch when, in their search for warmth, a scramble ensues, each poult making a desperate effort to get under the bunch. In the struggle they become surprisingly entangled, causing a condition that brings death to the weakest ones from smothering.

In order to save the remaining poults they were divided among three hovers, which ended the losses. These hovers were at first kept at about 90 degrees temperature for about a week, when they were reduced in temperature about 10 degrees weekly, until down to 70 degrees, which temperature was maintained until the poults were about six weeks of age, after which they do not require artificial heat. They were permitted to occupy the hovers for a couple of weeks longer, when the hovers were removed entirely. Care had been taken in keeping the hovers scrupulously clean by removing the dirt and supplying chaff. After removing the hovers, the poults were confined to their nursery rooms, each 4 by 12 feet, with an outside runway 4 by 20 feet. It was found necessary to provide additional runways as they rapidly outgrew those they were occupying. At four months of age they were given their liberty. They would not range, nor travel but a few rods from the place where they had been confined.

Feeding.

Unlike chickens, the young poults appeared not to know where to find their food. Teaching them to eat promised to become quite a problem. Failing to attract them to their feed in other ways, a few young chicks were placed in the nursery with each flock of poults. It was surprising how

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W. J. HICKS

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aptly they took their first lessons from the chicks. Within one hour the problem was solved and all were feeding and drinking, with no further trouble. The first feed was stale bread, moistened with sweet milk, chopped onion tops, grit, and pure water. At this time the poults were nearly three days old. About three days later their bread feed was gradually changed to commercial chick feed, cooked milk curds, and lettuce. Three or four days later there was added to this feed dry bran and beef scraps—five parts bran to one part scraps—mixed and placed within their reach in shallow boxes, which was kept before them all the time until they became five months of age. A convenient hopper for this dry bran feeding we find to be a box 4 feet long, 6 inches wide, and 6 inches wide, and 6 inches deep, with a strip 2 inches wide, nailed lengthwise and in the middle along the top. Supply this hopper daily, just enough for a single day's feed—all that the poults will eat. Fresh green stuff, such as lettuce, kale, or cabbage, was fed liberally daily, morning, noon and evening; also sweet milk and fresh water. The drinking vessels were washed clean daily. A box of gravel and cracked shells and a dust bath were kept in their nursery. From the time they would pick up oats, corn, or wheat their grain ration consisted of equal parts of these grains, mixed and scattered in the runways three times daily, as much but no more than they would eat. We regard that the most surprising thing in connection with the feeding was the small quantity of these grains consumed, which was evidently due to the very liberal supply of milk and green stuff provided.

Preparing for Market.

Two weeks before these turkeys were to be marketed for the Christmas trade they were weighed separately, when one-half of the number were divided into lots of four each and placed in darkened pens, admitting the light only at feeding times, while the remaining one-half were confined in roomy roosting quarters, having a runway of 20 to 50 feet. These quarters were not darkened in any way. Both lots, in lieu of the mixed grain and dry bran feed, were fed three times daily of the following fattening ration—all they would eat—making the change gradually: 6 parts corn meal, 2 parts middlings, 2 parts beef scraps, by weight, and moistened with milk. The green feed was fed as before.

This experiment lasted two weeks. The birds that were confined in darkened pens made no gain whatever in weight, while those birds that had more liberty gained 2 pounds and 2½ pounds each. These birds were marketed when a little more than 5½ months of age, when the pullets weighed 13 and 14 pounds each, and the toms 17 to 19 pounds each, live weight.—Ex. Sta. Bul. 465.

SUCCESS WITH THE INCUBATOR.

The person to run the incubator is the first condition of its success. A good incubator requires attention twice a day. One person should give this attention, and must give it regularly and carefully.

The farmer's wife or some younger member of the family can often give more time and interest to this work than can the farmer.

The best location for an incubator is a cool, dry cellar. The next choice would be a room in the house away from the fire or from windows.

Drafts of air blowing on the machine are especially to be avoided. Not only do they affect the temperature directly, but cause the lamp to burn irregularly, and this may result in fire.

The size of incubators that can be profitably used will depend upon the number of hens kept for brooding purposes.

A final condition of success with an incubator is not due to the incubator at all, but to the ability to successfully rear chickens after they are hatched.

There is a prevailing notion that incubator chicks are weaker than hen hatched chicks. This, however, is not necessarily true. Many of the prize winners of our poultry shows, as well as the choicest market fowls, are hatched in incubators. The fault with incubator hatched chicks lies in the treatment after hatching.

WHITEWASH.

Into a tight box or barrel put five or six gallons of hot water in which has been dissolved four or five pounds of coarse ground salt. Into this put a pailful of the best lime obtainable. The large lumps should be broken into small pieces. Immediately cover the barrel and cover with a heavy weight in order to keep it in place when the lime is slaking, for the uplifting power of the boiling mass will be surprisingly great. After a few moments uncover and stir the mixture to the bottom with a long stick, then recover and keep closed for a day or two. When fully slaked the lime should be of the consistency of thick cream. When applied to hen houses or a fence, it should be thinned with water to a consistency of common paint. If properly slaked the lime will be smooth and free from lumps.

When applying the wash dip out a sufficient quantity in a pail and stir in a handful of cement. This will cause the wash to adhere firmly to the surface. It will be of dazzling whiteness and "lay on" like paint.

An excellent plan when whitewash is to be used about hen houses is to put in a liberal quantity of crude carbolic acid.—Mrs. Basley.

THE WEATHER BUREAU.

Secretary Wilson stated today that every important meteorological change that occurred in the United States during the year was forecasted by the weather bureau long in advance. Storm warnings to lake, seacoast, and West Indian stations and frost warnings for the sugar, trucking, tobacco, fruit, and cranberry regions were issued whenever conditions justified. These warnings were successful. Particular attention was given to the hurricanes of September and October, 1910, and a number of testimonials commending the work of the bureau in connection therewith were received. The warnings of the approach of cold waves resulted in the saving of growing crops and prevented injury to many shipments of perishable goods and to farm stock.

Owing to a large deficiency in the precipitation of the year over a considerable portion of the country, there was an absence of great floods, except in California, where, during February and March heavy winter snows and rains combined to cause floods, with resultant damage, estimated at $1,750,000. In July and October the smaller tributaries of the Ohio river were in flood as a result of heavy local rains. The damage to crops and other interests amounted to about $5,500,000.

It's the

Laying Hen

That makes Poultry Raising Profitable

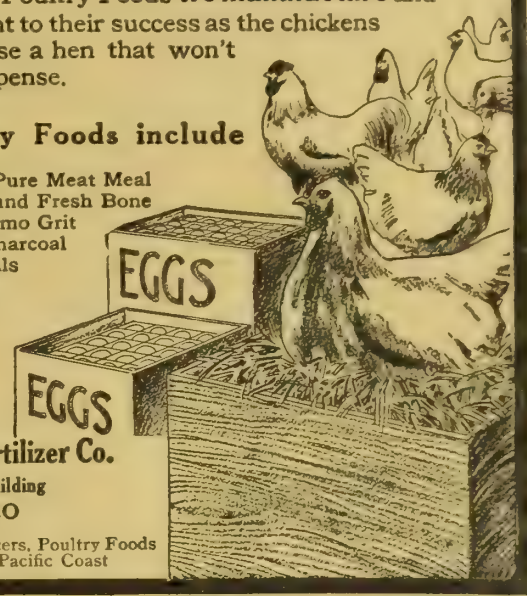
There are certain Food Elements that are absolutely necessary to keep your hens healthy and productive. If a hen does not have the proper food and nourishment she cannot be expected to produce eggs

Successful Poultrymen use and recommend our Superior Foods

They find that the Poultry Foods **we manufacture** and sell are as important to their success as the chickens themselves, because a hen that won't lay is a useless expense.

Our Superior Poultry Foods include

Pure Blood Meal
Beef Blood and Bone
Cracklings
Pure Meat Meal
Ground Fresh Bone
Limo Grit
Animal and Willow Charcoal
Granulated Oyster Shells
X-Ray Meat Scraps
Bone Charcoal



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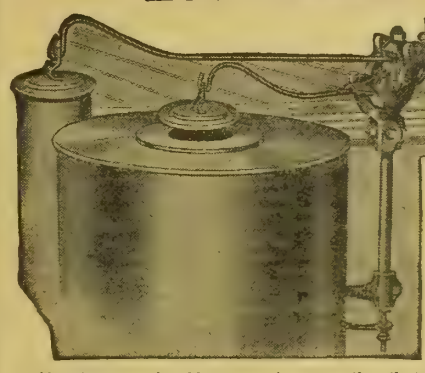
Lee's BEST Invention



regulates and adjusts, *automatically*, and in correct relation one to the other, *heat, moisture*, and *ventilation*. A great new principle discovered and applied in the

Mandy Lee Incubator

High heat must have low moisture. Low heat must have high moisture. The proportions of each are vital to the hatch. Thousands of hatches are ruined from no other cause than that the *proportions* of heat and moisture are wrong. The Mandy Lee is the only Incubator that applies this principle—the only one that measures the moisture accurately and automatically regulates the amount *according to the temperature*. If the heat from any cause, day or night, rises suddenly, don't worry, the hatch will not be spoiled, because it is *dry heat*. The *moisture* has been *decreased* as *heat increased*, and greater ventilation secured—*all automatically*. This is also the only incubator with *wide-open ventilation*, such as is used in poultry houses, which proved such a great success last year. You should acquire an accurate knowledge of our latest and greatest invention. Our book *shows* and *explains*. Plain, practical, authoritative. Write for free copy.

GEO. H. LEE COMPANY, 225 W. 2nd St., Los Angeles, Cal.

Cows Give 262 lbs. More Milk Daily

After substituting a part of their regular feed with Proteina, says a leading dairyman. ¶ Unequalled for Cows, Calves and Poultry, and fed at a comparative low cost.

46% PROTEIN - 10% FAT

Proteina is concentrated from the Soy Bean and contains 33⅓ more Protein. The U. S. Agricultural Dept. says: "A bushel of Soy beans is at least twice as valuable for feed as a bushel of corn." ¶ POULTRYMEN FIND PROTEINA BETTER THAN BEEF SCRAPS FOR LAYING HENS. Write for signed letters from Poultrymen and Dairymen.

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In this department we will insert your advertisement under a classified head for 1½ cents per word per issue. No ad accepted for less than 25 cents. Our classified columns are the clearing house for our many thousand readers.

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POLAND CHINAS
REAL BIG, SMOOTH TYPE

Sows and gilts bred to "Greenbacks," the great Ohio boar. Gilts sired by "Greenbacks" old enough to breed. Gilts sired by "Meddler Keep," the great Missouri boar, who was sired by "Master Meddler," said to be the greatest Poland China boar living. Serviceable young boars sired by "Greenbacks" and "Meddler Keep," and whose dams, "My Peerless Illinois Sows," are among the cream of the breed. Prices very reasonable.

GEO. A. SMITH, Corcoran, Cal.

We have now five choice young registered Holstein bulls for sale. Handsome fellows. Stock of our breeding won at the fairs all over the state. Juliana De Kol was champion at Sacramento. Most of these bulls are either sired by her brother or are out of her sisters. M. E. Sherman, Minnewawa Stock Farm, Fresno, Cal.

Percheron Stallion For Sale—A registered, two-year-old, black Percheron, sound and gentle, weighs now 1650. Will deliver him at your town for $1000. He will pay for himself first season. Address Chas. F. Thompson, R. F. D. 3, Bakersfield, Cal.

Grapewild Farm Herd of thoroughbred Berkshires. State fair prize winners. Boars and sows of all ages, unrelated. Address A. B. Humphrey, Mayhews, Sacramento Co., Cal.

For Sale—Two two-year-old colts, gentle and broken; two cows, 125 pigs and sows; 35 H.P. Western gas engine with No. 5 two-step pump and complete plant, practically new. Will exchange for good real estate. J. Lenert, Chino, Cal.

Three Half Bred Toggenburg Swiss Milk Does, sired by "Bismarck,' also one three-quarter bred doe kid, 6 months old. Price $20 each, or $75 for all. Full description on application to W. E. Hyer, Hemet, Cal.

For Sale—To avoid inbreeding; the best bred Jersey bull in Southern California. Best in individuality, best line of calves, yearlings and two-year-olds in milk. Price $75. W. J. Cole, R. D. 1, Anaheim, Cal.

Three Holstein Friesian Bulls, splendid young animals, for sale. Well marked and subject to registry. Write at once to Geo. C. Roeding, Fresno, Cal.

Belgian Hares—Fine, healthy breeding stock, for sale cheap. Write for your wants and prices. J. A. Reinhart, Hollister, Cal.

For Sale—Shorthorn bulls and Berkshire hogs. Bred for size and quality. H. L. Murphy, Perkins, Cal.

For Sale—12 choice Jersey milk cows and heifers, bull, and American Separator as good as new. W. Helfrich, Palmdale, Cal.

Berkshire Pigs, all ages and both sexes, for sale. B. de Groot, Aptos, Cal.

WANTED

Local Representative Wanted—Splendid income assured right man to act as our representative after learning our business thoroughly by mail. Former experience unnecessary. All we require is honesty, ability, ambition and willingness to learn a lucrative business. No soliciting or traveling. This is an exceptional opportunity for a man in your section to get into a big paying business without capital and become independent for life. Write at once for full particulars. Address E. R. Marden, Pres. The National Co-Operative Real Estate Company, L 448, Marden Building, Washington, D. C.

Wanted—Want to lease fully equipped dairy and hog ranch with option to purchase at least a half interest. Must be good and well located. Address 527 Grosse Bldg., Los Angeles, Cal., care of Ranchers Realty Co.

Wanted—By capable young man, position as manager or foreman on fruit ranch. Box 61, Aptos, Cal.

Wanted—1000 Royal apricot trees, 4 to 5 feet on peach roots. Address H. L. Bauer Nursery, 737 S. Spring St., Los Angeles.

TREES

Leonard Coates Nursery Company, Morganhill, California. Introducers of the San Jose Mayette and Concord Walnuts. Trees propagated exclusively from original bearing trees. General Nursery Stock of Fruit and Ornamental Trees, Roses, etc. Send for our catalogue with information on "Pedigreed Fruit Trees." Samples of Walnuts sent on request.

Grafted Walnuts on Cal. Black Root—Fran-quette, Mayette, Concord, Placentia Perfection, San Jose Mayette, fine stock, true to name. Also Bartlett Pear, Imperial Prune, Apricot, and a complete line of other stock. Santa Clara Valley Nurseries, Gilroy, Cal.

For Sale—Apples; 3000 fine, standard, 5 to 6 ft. trees. Winter Banana Apple trees, the hardiest tree and the finest apple on the market; price right for quick sale. Address H. L. Bauer Nursery, 737 S. Spring St., Los Angeles.

For Sale—Excellent sour seed bed stock. Limited amount of pedigreed lemon, navel and Valencia stock. These buds are pedigreed from the best producing groves and trees in California. State number you wish. F. H. Nusbickel, Glendora, Cal.

Fine Line of Navels, Valencias and Eureka Lemons for delivery spring of 1911. Con-tract now and get the first choice. The King Citrus Nurseries, Whittier, Cal.

Inspect our strictly high grade lemon and orange trees for 1912 delivery. Robinson Citrus Nurseries, San Dimas P. O., Cal. Take P. E. San Dimas car to Valley Center, 3½ blocks north.

100 PER CENT PROFIT IN 6 MONTHS. For Sale—Citrus nursery of 1500 orange and lemon buds, yearlings now. Care for them till spring. Address P. O. Box 1597, Los Angeles, Cal.

Orange, Lemon and Grapefruit Trees, all first class stock. Special prices to parties planting groves. Edward A. Carvel, 1454 Oak St., Glendale, Cal.

For Sale—Orange and lemon trees for spring planting. Would exchange a limited number for a good cow or hens. A. H. Dugdale, Etiwanda, Cal.

For First Class Valencia and Navel Orange Trees and Eureka Lemons, see A. G. Snow, Oxnard, Cal.

Low Prices on advance orders of deciduous fruit trees. Ballou's Nursery, Pasadena, Cal.

FARM LANDS FOR SALE.

The Best Bargain Yet—A good, well improved, money making farm of 56 acres, 2½ miles from Arroya Grande, Cal. A prosperous little town—no saloons. Five miles from Pizmo Beach, the finest beach in California. Free rural delivery. The house alone cost $2,000. Good barn and outbuildings. Fine roses. Walnuts and oak trees around house. Assorted berries and fruits. Plenty wood for fuel. Plenty of fine soft water. No irrigation required, consequently no danger of Bermuda grass or other foul weeds. Owner must have the money at once, hence the sacrifice. Price $6,500; $3,000 cash, balance two years, 8 per cent. Also an 80-acre tract of fine, level, loamy land, 50 acres of which is No. 1, in northeastern part of Santa Barbara County. Will grow alfalfa, vegetables, fruits, cotton, etc. No alkali or hardpan. Free timber 1½ miles away. Elevation 2,500 feet. No extremes of heat, cold or storms. Can be irrigated if necessary. $600 takes it. Same owner as above. Wm. T. Mantz, Maricopa, Cal.

For Sale—700 acres land, 42 miles of Los Angeles. Plenty of good well water for domestic use; some running water on the land, and I believe plenty of water can be obtained to irrigate all of the tillable land, about 500 acres; about 200 acres fenced. I will take $35 per acre, one-third cash. I have 29 cows and heifers and 18 other young cattle, including calves. I will sell a pick of 20 out of the 29 cows for $50 per head, or I will sell the 77 for an even $2000. I have other personal property, viz.: Bees, mules, pigs, chickens, and farm implements. J. E. Youngblood, Lang, Cal.

Citrus Orchard—56 acres, all under cultivation, 670 lemon trees, full bearing; 716 orange trees, full bearing; 200 lemon trees 2 years old, 250 orange trees 2 years old, 60 Tangerines, full bearing; 2 acres deciduous fruit of all kinds, berries and small fruit. Good house of 13 rooms, finished in hardwood, basement. Barn and other buildings, well and windmill. Well for irrigation costing when completed $1500. Palms and flowers. Lighted with acetylene gas. In fact, it is the best ranch in the valley. Over 2000 shares of water stock. Price $37,000. Terms. F. J. Conrad, The Hustler, West Grand Ave., Escondido, Cal.

For Sale—LINDSAY ORANGE LANDS.

Eleven days before Christmas the fourteen packing-houses of Lindsay sent out pay checks for the 1910 navel orange crop. Lindsay orange district had the holiday orange market all to themselves, and of course they sold at good profit.

Why not invest in some of this Lindsay orange land and get the benefit of rapidly advancing prices?

Ten acre tracts in Lindsay, $150 per acre, on easy terms.

Choice Tulare alfalfa lands, water in abundance; any size tracts, $50 per acre up.

KIOUS-WHANN REALTY CO.,
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For Sale—10 acre orange grove with 5000 boxes of fine fruit on trees. In one of our very best sections, 20 miles from Los Angeles. No frosts, no scale, no smut. Trees 14 years old and in perfect condition. Heavily fertilized last week. Better than 30 per cent annual dividends. Sacrificed by a widowed lady who cannot give it attention; $16,000. Clear $4000 under value. Otto Anderson, 800 West 47th St., Los Angeles, Cal.

For Sale—A 20-acre farm for $20 cash and $20 a month; possession now; $90 to $125 per acre; your crops pay for the land; rich, level land for alfalfa, oranges, almonds, grapes, cows, chickens; abundance of ditch water for irrigation for $1 an acre a year. Where else can you get this? In Oakdale Colony, near good town and railroad station. Climate delightful. T. Wiesendanger, 408 West Sixth Street, Los Angeles, Cal.

For Sale or Trade—80 acres land in Coachella Valley, Riverside Co., Cal. Fine sandy loam; 3½ miles from Indio; 2 wells, 20 H.P. Foos engine; no frost; fine for early vegetables, dates, cotton, etc. Will trade for rooming house, L. A. or Long Beach, or orange grove out from L. A., or what have you? Price $8000. Might assume. Write W. Spry, P. O. Box 25, Coachella, Cal.

170 Acres—¼ mile from R.R. station and school, $30 per acre. 100 acres in crop; more can be planted to trees or vines. Partly warm citrus soil or for winter gardening; some alfalfa land; well 50 feet deep, 10 feet across, water 8 feet from surface; all under fence; no other improvements. Terms $3000 cash, balance at 7 per cent; will not trade. Address C. T. Haney, Escondido, Cal.

1920 Acres Alfalfa Land—One of the best subdivision or dairy propositions in the Sacramento Valley. 1,000 acres level bottom loam soil, two cow sheds, 400 head capacity, horse barn for 60 head, 10 room ranch house, blacksmith shop, hog sheds, outbuildings, etc. Well fenced and cross fenced, many corrals. Three miles from railroad station in Butte Co. This is an absolute bargain. Price $50,000. Very easy terms. Apply owner, Paul Goodloe, 1049 Phelan Building, San Francisco.

Choice Orange Land, Exeter District—63 acres, 3 miles south of the town of Exeter, California, three-quarters of a mile from Southern Pacific railroad station, right in the foothills, leveled, water developed on it. Write for particulars. The Phalanx Company, 513 Chamber of Commerce, Los Angeles, Cal.

For Sale—
THE ORANGE GROVE MAN.
Large list of orange groves in best districts. Seven years' experience in growing oranges.

A. W. RICHARDS,
THE ORANGE GROVE MAN,
Claremont and Pomona, Cal.

For Sale—10 acres at $300 per acre and 20 acres at $400 per acre, at Burbank. These are snaps and each $100 per acre under the market. Geo. W. Haines, 303 Frost Bldg., Los Angeles, Cal.

For Sale—310 acres finest orange land, adjoining Fontana orange groves, $75 per acre; this must be sold this week and the price will sell it. Geo. W. Haines, 303 Frost Bldg., Los Angeles, Cal.

Alfalfa and Fruit Land under irrigating ditches, $25 to $100 per acre; near town and river. Write for booklet. J. O. Blichfeldt, Anderson P. O., Shasta Co., Cal.

FARM LANDS FOR SALE.

IN TWO YEARS

SWEET POTATOES
PEACHES
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TOMATOES
and many other crops
will buy you a twenty-acre home in one of the most fertile sections of California.

Small payment down.
Six years on balance if desired.
Or will take half of crop each year until fully paid.
Two railroads.
Plenty of water for irrigation.
Schools and Churches.
Climate ideal.
Cannery and packing houses within one mile.
In a well-developed colony section.

Come in and let us tell you about it and go with us to see the land.

Only 39 20-acre pieces left.

ORCHARD AND FARM LANDS CO.,
309-310 Stimson Bldg., Los Angeles.

For Sale—(for 30 days only), 14 stands of bees, extractor and sun extractor; 7 head of horses, 25 head of cattle, 2 bulls and 24 head of hogs, 1 new 4-horse wagon, new cream separator, 100 chickens and 35 turkeys, 100 sacks of wheat, 100 sacks of oats, 50 sacks of barley and 75 ton of hay in barn; 1 new disc plow and harrow, and 1 good 4-gang plow. The rest of the farming tools, consisting of reaper, 2 mowers, 1 hay rake, 2 harrows, 1 broad-cast seeder; 1400-egg incubator, blacksmith outfit, 2 old wagons, 1 surrey, 1 garden seeder, 1 reaper for grain, 1 drill and all other small tools. This includes the rent paid till October 1, 1912, on the 758 acres, which amounts to $600 per year. Price $4500. F. J. Conrad, The Hustler, Escondido, Cal.

For Sale—By owner, 160 acres in Imperial Valley; good soil, level, ditched and bordered; patented land; abundance of water; 160 shares water stock in Imperial Water Co. No. 1; a good 3-strand wire fence; also cross-fenced into 5 lots; water tank in each lot; 120 acres good stand alfalfa; 40 acres barley for winter feed; 4½ miles from El Centro; splendid place for dairying and hogs; $100 per acre, 3-5 cash, balance 5 years. Call or write T. G. Mort, 939 E. 51st St., Los Angeles, Cal.

For Sale—Huasna Valley, San Luis Obispo Co., 12 miles east of Arroyo Grande. Finely improved ranch home of 95.31 acres, all tillable, 60 acres bottom. Water near surface; school, P. O., coast climate. Foothills well timbered with oaks. Watered by numerous springs and creeks. Hog-raising, poultry, dairying, principally. $75.00 per acre; $2500.00 time. For details address Owner, Chas. F. Wright, Huasna, Cal.

For Sale—Near Lancaster, Cal. Bargains in improved and unimproved land. Also relinquishments for sale or trade. Some homestead land. A. S. Burnham, Box 451, Lancaster, Cal.

Apple Orchards—Large and small, in the only apple producing section in California. The greatest section west of Missouri River. Write for booklet. Geo. W. Sill & Co., Watsonville, Cal.

For Sale or Exchange for Los Angeles or Orange County acreage. Five acres in city of Santa Cruz, all in fruit, well improved. William Richard, 439 River St., Santa Cruz, Cal.

For bargains in orange orchards in the famous early orchard districts at Globe, address E. A. Miller, Manager Globe Realty Co., Globe, Cal.

San Diego County! My splendid weekly newspaper will tell you about this great county and superior climate. 16 weeks for 15c. H. P. Rising, publisher, Escondido, Cal.

San Joaquin Valley, cheapest fruit and alfalfa land in California. Buy from owner, no agent. L. G. Dawson, Tipton, Cal.

FOR EXCHANGE

For Exchange—$8000—5 acres in city of Santa Cruz, Cal., in bearing apple and peach orchard, berries and family fruits; 5-room house, large barn and outbuildings. Want land for growing nursery stock near Los Angeles; prefer Gardena. W. M. Gray Land Co., Gardena.

MISCELLANEOUS

Free—"Investing for Profit" Magazine. Send me your name and I will mail you this magazine absolutely free. Before you invest a dollar anywhere, get this magazine—it is worth $10 a copy to any man who intends to invest $5 or more per month. Tells how $1,000 can grow to $22,000; how to judge different classes of investments; the real power of your money. This magazine for six months free if you write today. H. L. Barber, Publisher, R. 430, 28 W. Jackson Boulevard, Chicago, Ill.

For Sale—Sixty berry ice chests for distance shipping. In good condition. Cheap. Will give with sale a line of good customers. F. H. Nusbickel, Glendora, Cal.

The Bell Agency. A general public service bureau, 833 Market St., San Francisco. Attends ot anything for anybody. Bank references. E. D. Dement, Mgr.

Lime and Gypsum for the Land—Lime for spraying. Best quality. H. B. Matthews, 733 Merchants Exchange, San Francisco, Cal.

Grower to Consumer—Raisins in 50-lb. boxes. Sultanas, 6½c; Muscatels, 3-cr. at 5c, 2-cr. at 4½c. A. H. Dugdale, Etiwanda, Cal.

TURKEYS

MAMMOTH GOLDEN BRONZE TURKEYS. "International Tom," first prize and special prize turkey at the International Poultry Show, and said to be the largest turkey in the world, heads the flock. Young stock with large bone, long body, full breast, well marked and early maturing, for sale. Their mothers are from the leading prize-winning flocks of several Eastern states. I claim to own the best flock of turkeys on the Coast. Write soon, as orders are coming in fast. Prices very reasonable.

GEO. A. SMITH, Corcoran, Cal.

For Sale—Thoroughbred Mammoth Bronze turkey hens, from 18 to 20 months old; of large size and fine markings and the kind that lay early. Only $8 each or four for $30. Mrs. Nellie Hart, Holtville, Cal.

POULTRY

The Goodacre Strains—Get your order in for 100 R. I. Red chicks at $12. Buff Orpington and Ancona chicks now 14 cents each; prices will soon advance. Some grand values in Buff Orpington hens at $2 each, males $6 and up. Utility pen of Anconas for $12. White Leghorn hens and pullets, $1 each. We are about sold out of R. I. Red males. A fine trio of White Runner ducks for $12. Three more blue ribbons at San Jose show. Don't you want to become another of our satisfied customers? Goodacre Bros., Compton, Cal.

How to Make Money—Mrs. A. Basley's Latest Poultry Book is without exception the most wonderfully complete manual on the subject of successful poultry management ever written. The secret of how to raise every turkey hatched and the "Basley Formulas," now published for the first time, are worth many times the price of the book. The "Western Poultry Book" is a practical book by a practical woman. Price $1. Address Mrs. A. Basley, Garfield Place, Hollywood, Cal.

Fifth Year—Kellerstrass Crystal-Byers Pearl White Orpingtons. Marvels in beauty and egg production. Big, blocky and white. Exceptional value. Eggs $3 and $5 per 15; baby and thirty-day-old chicks, prices upon application. Buff Wyandottes, the "classiest" American breed, $1.50 per setting. Satisfaction guaranteed. Book orders now for future delivery. Circulars and photographs later; send for them. Frank Haasis, Ontario, Cal.

See Here. If you want some of the best stock in this world, we have it. All thoroughbred S. C. R. I. Reds, Black and White Minorcas, Crystal White and Black Orpingtons and Barred Rocks. Orders filled as catalogued. Baby chicks, hatching eggs, cockerels, and a few pens. Address, Monte Rio Poultry Yards, Newcastle, Cal.

Frank E. Baldwin—I have some fine March hatch cockerels from this well-known breeder's yards, raised from day-old chicks; pullets from same lot laid at four months, and twenty of them have averaged eleven eggs per day for the last thirty days. Price, $2.50 per single bird, or $4.00 per pair, while they last. Address, C. O. Nichols, Bostonia, Cal.

Eggs from select White Wyandottes, White Rocks, Barred Rocks, Black Minorcas, White Leghorns. $1.50 per 13, $2.50 per 26. Hens, pullets and cockerels, $2.00 and $3.00 each. Purity Poultry Yards, 706 E. Walnut St., Santa Ana, Cal.

For Sale—Pullets, cockerels and yearling White Orpingtons (Cook strain), Black Minorcas (Northrup strain), White Minorcas, R. I. Reds (Tompkins strain), pure bred. C. U. Chamberlin, Los Gatos, Cal.

Day-Old Chicks, Barred Rock and White Leghorns, good laying strain. Order now to insure early fall delivery. The Fairmount Hatchery, 29 B Rural No. 1, Santa Cruz, Cal.

Poultry Wanted—We pay the highest market price for all the local poultry we can get, no matetr how large the quantity; also fresh ranch eggs. We remit immediately. Allaway & Layton Co., 607 E. Third St., Los Angeles, Cal.

For Sale—100 R. I. Red hens, 100 B. Plymouth Rock hens, 75 Buff Orpington hens and roosters (utility stock), $1.00 each for the lot, or $1.25 for a few. Cash with order or stamped envelope for reply. Louis W. Neilsen, R. R. 2, Box 1, Petaluma, Cal.

Orpingtons—High class Buff and White. Bred to lay from prize winning stock. 500 pullets and cockerels for sale. Reasonable prices. Will mate pens with unrelated males. Write Mrs. S. Swaysgood, Route 1, Healdsburg, Cal.

"Chicks well hatched are half raised." White and Brown Leghorn chicks from healthy, vigorous breeding stock. San Jose Hatchery, Henry Langenschwadt, San Jose, Cal.

A 45c Money Order (no stamps) brings full instructions for a cheap roost and dropping board that settles the mite question for good. John S. Siebert, 1036 Second St., San Diego, Cal

Just Hatched White Leghorn Chicks every month, from select, heavy laying, mature stock. No pullet eggs used. Lodi Hatchery, E. Elm St., Lodi, Cal.

White Leghorns—Buff Orpingtons. Bred for beauty and great egg production. Grand lot of both old and young stock for sale. Prices reasonable. Write your wants. Model Poultry Farm, Box H, Irvington, Cal.

Very fine strain Barred Rock cockerels. Now booking orders for baby chicks and eggs; also S. C. R. I. Reds, headed by my $50.00 male to special high-class females. R. B. Sherman, Newcastle, Cal.

Western Hatchery—We are booking orders for day old chicks hatched from well selected, well bred stock. Write for prices and terms. Western Hatchery, Western Ave., Petaluma, Cal.

Schellville Hatchery. Thoroughbred White Leghorn chicks, hatched from heavy winter layers. The kind that pay. No dead or weak chicks charged for. Order early. Box R 72, Sonoma, Cal.

Handsome pure bred Barred Rock cockerels, 8 months old. Very cheap considering quality. $2 each or three for $5. Mrs. Nellie Hart, Holtville, Cal.

For Sale—Barred Plymouth Rocks, cockerels. Eggs $5 and $8 per one hundred. Miss A. Loosemore, Campbell, Cal.

Barred Plymouth Rocks (Hawkins Royal Blue Strain). Cockerels, day-old chicks and eggs for hatching. Enoch Crews, R. No. 1, Santa Cruz, Cal.

For Sale—Light Brahmas, fine stock. Also booking orders for eggs in season, $1.50 for 15. H. Koopman, Downey, Cal., Ranch 1000 feet southwest of S. P. depot.

Ring-Necked China Pheasants for sale. Pairs or breeding pen of four; also eggs for hatching during the spring season. Address T. D. Morris, Agua Caliente, Cal.

Barred Rocks Exclusively—Some fine cockerels for sale. Now booking orders for hatched chicks. Eggs for sale. Write for prices. G. L. Hawley, Madera, Cal.

The Luedkes—Incomparable R. I. Red high record layers. Eggs by the hundred $6.00. Fancy matings $3.00 for 15. P. O., Anaheim, Route 1.

Fifteen S. C. White Leghorn roosters, 6 months old, from heavy laying stock. L. T. Smith, Beaumont, Cal.

Rose Comb Black Minorcas, nine years line bred. Stock and eggs in season. Eleanore Minorca Farm, R. D. 1, Los Angeles, Cal.

Barred Plymouth Rocks—The kind that "win and lay." Eggs and stock for sale. C. H. Vodden, Los Gatos, Cal

POULTRY

Just What You Want—S. C. Black Minorcas. Splendid Layers—Thoroughbred Stock. Eggs and Day-Old Chicks.

CHOICE WHITE HOLLAND TURKEYS. A few extra fine young toms at reasonable prices. Eggs and young poults for sale after March 1st. Now is the time to order. Write wants. Mrs. W. D. Root, 735 Verdugo Road, Glendale. P. O. address, R. D. 1, Box 105, Los Angeles.

Light Brahmas from the best flock on the Coast, for sale. Write for prices. W. R. Struthers, Monrovia, Cal.

Kellerstrass Crystal White Orpington Eggs, $2 per 13. R. L. Warren, National City, Cal. R. D. 1.

MACHINERY

For Sale—Second-hand windmills, tanks, pumps, engines, farm machinery.

OUR SPECIALTY—NO WORRY. MATERIAL GUARANTEED. WINDMILL OUTFITS.

8 ft. steel aermotor, fine steel tower, tank, galvanized pipe, pump complete, $55; nearly new 10-ft. steel Challenge mill, tower, 3000-gal. tank, 20-ft. tank stand, 2-inch galvanized pipe, pump complete, $75; also smaller outfits $39 and up.

ENGINES.

Another 1½ H.P. Fairbanks, $55; 2 H.P. Fairbanks, brand new, $69; 2½ H.P. Lambert, $75; 5 H.P. Holly; 6 H.P. Fairbanks; 22 H.P. Foos, $390; 10 H.P. steam engine, $45; 2 H.P. steam engine and boiler; 8 H.P. boiler.

TANKS.

We have just got in another bunch of wood tanks, some brand new; can give you almost any size you want. Save you half and guarantee them.

FARM MACHINERY.

Walking and riding plows, Fresno, slip and wheel scrapers, spike tooth, spring tooth and disc harrows, mowers, two-horse tree sprayer, Delaval cream separator, dry washer, seed sower, fruit crusher.

PIPE SPECIALS.

2000 feet 4-in. casing, brand new threads and couplings, 15c per foot; 200 ft. 10-in. line pipe, fine for under ground, $16 takes the lot.

WAGONS, BUGGIES, HARNESS.

Outside shipments receive personal attention. Prices very lowest good, serviceable material can be furnished for. Get others' prices, then compare material and prices with us.

DEMMITT CO., 120 N. Main, Los Angeles.

For Sale Cheap—Gasoline engine with tree spraying outfits. In first-class condition. Jordan Oil Co., Los Angeles, Cal.

SEEDS AND PLANTS

Free—20 per cent in fresh package seeds, to introduce our goods, on all orders amounting to $2, and not over $5. Prices. Apples, 12½c; Pears, 30c; Roses, 30c, first grade 4 to 6 ft. trees, No. 1 Roses. We pay the freight. Medford Nursery Co., Medford, Oregon.

Citrus—150,000 sweet and sour seed bed stock, first class in every particular. Also one and two-year Eureka lemon, Washington Navel and Valencia nursery stock. C. W. Wilhite, Glendora, Cal. Home phone 2062.

Berry Plants and other good things for the garden and farm. My new catalogue is just out; send for it now. Louis F. Scribner, Pasadena, Cal.

California Black Walnuts for Seed—From the finest trees in state; large or small lots. Santa Clara Valley Nurseries, Gilroy, Cal.

For Sale—1000 Avocado seed from this year's fruit. Price low if purchased soon. Address Mrs. W. R. Chaffee, Box 742, Sherman, Cal.

FOR RENT

Imperial Valley Fruit Ranch to Let—160 acres in early table grapes, apricots, alfalfa and cotton; 2 miles from county seat. Tenant must have experience, and $3,000 capital to furnish labor. Address Horticultural Dept., 205 Grant Building, Los Angeles, Cal.

To Let—10 acres of sandy loam soil; cheap irrigating water, 5-room house, barn and outbuildings; also 5 acres, 5-room cottage, cheap water and a herd of milk cows, for sale. W. M. Gray Land Co., Gardena.

ORNAMENTAL PLANTS

For Sale—Extra fine stock of Strawberry Guava. We have them by the 100 or by the 1000, potted or in flats. Also Loquats, Palms, Roses and a full line of Ornamental stock. Orange County Ornamental Nursery, Fullerton, Cal.

Plants of all kinds, wholesale and retail, at Las Palmas Greenhouses, Palo Alto, Cal. Contracts solicited. Let us know your needs at once

DUCKS

We have a few genuine "Rankin" strain Mammoth Pekin drakes to spare that will add a pound each to your next lot of ducks. Grand big fellows, fit to show. Price two to five dollars each. Eggs from our best pens, $10 per hundred, $2 setting. Long Beach Poultry Ranch, Long Beach, Cal.

For Sale—Especially fine Indian Runner drakes, fawn and white, $2.50. Buff Cochin cockerels, first-class, thoroughbred, $2.50 and $3.00. M. E. Larkin, 1020 Fairview Ave., Casa Verdugo, Cal.

FARM LANDS WANTED.

Farms Wanted—We have direct buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property Free. American Investment Association, 12 Palace Bldg., Minneapolis, Minn.

Cash for Your Property, any kind, anywhere. If you want to buy, sell or exchange, address Northwestern Business Agency, Minneapolis, Minn

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Have You a Cow?—Have you a creamery? Have you a cheese factory? Write us. Everything used in either a dairy, creamery, cheese factory, or for handling milk, cream, butter or cheese. We are in a position to quote you prices on entire creamery or cheese-making outfits. We make a specialty of only the latest and best sanitary machinery and supplies. Send us a list of what you want, and we will quote prices which we feel certain will interest you. O. J. Weber Co., 225-227 East Sixth St., Los Angeles, Cal.

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Catalogues for the seed and nursery trade, the live stock and poultry industries, are a specialty with us. Two thousand illustrations to select from. Write for prices and samples. The Kruckeberg Press, 237 Franklin St., **Los Angeles.**

Agricultural Implements—Vehicles

For Sale—Agricultural implements, vehicles. Splendid values, lowest prices, liberal credit. See us without fail before buying. Catalogs mailed out of town customers. Write us describing what you wish to buy. When in the city a personal call will show the largest stock and assortment in the Southwest. Arnott & Company. Established 1892. 112-118 South Los Angeles Street, Los Angeles

RARE PLANTS

Wild Plant Improvement Gardens, Santa Ana, California. Newton B. Pierce, proprietor. Rare choice ornamentals and new fruits from all lands

AUCTION

Entire Nursery Stock of H. L. Bauer

Sales Grounds 737 So. Spring Street

FRIDAY, NOVEMBER 24, 10 A. M.

This nursery stock has been turned over to us for immediate sale as parties have to vacate grounds at once. This stock is all young, healthy and of the choicest varieties, consisting in part of: California Red Woods, Cedar de Odora, Cypresses, Monterey Pines, Rubber Trees, Black Acacias, Eucalypti, Camphors, Date Palms, Fan Palms, Peppers, Oaks, Chanorops Palms, Dracena Palms, Arbor Vitaes, Magnolias, Box Woods, Scotch Brooms, Bamboos, Bread of Heaven, Poinsettias, Laurels, Irish Jews; all kinds of Tropical Fruits, Auracaria, Excelsea, Bougainvillas, and many other vines; Yuccas, Bottle Trees, Italian Cypresses, Fern Baskets and Fern Tubs, and many rare and new plants. Everything in pots, tubs and cans, so you can keep them until ready to plant.

Persons looking for exceptional bargains in fine nursery stock cannot afford to miss this sale. Mr. Bauer is known to have the best assortment of ornamental nursery stock in Los Angeles, and you can do no better than to supply yourself from this stock.

RHOADES & RHOADES

830 South Main St. Los Angeles

AUCTIONEERS.

Phones: Main 1259, F1259.

SUDDEN DISASTER AND CONSTANT DISEASE.

The nation has been shocked by another appalling disaster, this time in Pennsylvania. A dam, built across a narrow gap between two hills to hold back a vast volume of water, suddenly gave way. The flood poured down the valley, carrying death and destruction with it. About forty lives were lost in a few minutes. A wave of sympathy swept over the country. Red Cross physicians and nurses hastened to the scene. Food, clothing, hospital supplies and money poured into the death-swept valley. Special trains loaded with supplies and men started for the town almost as soon as the news of the disaster was received. The state of Pennsylvania and the entire nation, if necessary, stood ready to relieve suffering and to save life, without regard to the cost in labor or money. All this is right; nor should it be otherwise, says The Journal of the American Medical Association. Yet how strange that our sympathies should be aroused to immediate and purposeful action by the loss of forty lives in a sudden and unusual way, when we are callous and indifferent to the fate of thousands who die from preventable but familiar causes. A Johnstown flood, an Iroquois fire, a San Francisco earthquake, will convulse the world with horror, yet the death from preventable diseases of over 600,000 people in the United States each year excites little interest. The newspapers announce the Austin disaster with front page "stories" and enormous headlines, yet the United States Census report for 1908 (the last one available) shows that in that year in Pennsylvania alone, 2450 people died of typhoid, 1920 of diphtheria, 8703 of tuberculosis, and that 9026 infants under two years of age died of infantile diarrhea, a total mortality of 22,099 from only four preventable diseases in only one state. So accustomed are we to these enormous losses through familiar diseases, that we accept them as a matter of course and as the inevitable lot of mankind. Yet each of these diseases is as preventable as was the Austin flood.

LIABILITY OF COMMON CARRIERS.

As a general rule railroad companies and other common carriers are bound to transport all goods that are properly offered for that purpose, but any common carrier may lawfully refuse to accept goods for transportation if they are not properly prepared or packed for the purpose. However, if a common carrier does accept for transportation goods which are not properly conditioned, prepared or packed it thereby assumes the ordinary duties of a common carrier, and is bound to see that the condition and packing of the goods are such as to insure their safety in transit. If the carrier is neglectful of these duties the consequences of such neglect cannot be transferred to the shipper or owner of the property. Accepting a shipment for transportation of goods not properly prepared therefor, without qualification or application concerning the fitness of condition for that purpose, subjects the carrier to all the liabilities ordinarily attaching to shipments properly packed or prepared. Generally a common carrier is regarded in law as an insurer of the property carried, and the only way, aside from express contract, by which a common carrier can avoid liability for loss of, or injury to, goods carried by it is to show that such loss or injury was occasioned wholly by the act of God, or of the public enemy, and that no negligence of omission or commission concurred to produce the loss or injury.

A common carrier that undertakes to transport and deliver live animals is subject to the same responsibilities with respect thereto as in ordinary cases of goods received for transportation, except that it is not accountable for, and does not assume the risk of loss or injury to live animals, which arise from their nature and propensities, and which could not be prevented by due exercise of foresight, vigilance and care. To escape liability for loss or injury to live animals the burden of proof is on the carrier to show such loss or injury was occasioned by the act of God, or of a public enemy, or by reason of the nature and propensities of the animals themselves.—Wisconsin Farmer.

DOLLS AND ARTIFICIAL FLOWERS WHICH CHANGE COLOR.

The principal uses of cobalt in the United States are in making glass and pottery. A beautiful blue is given to glass by the oxide of cobalt. Sympathetic inks, according to a report of the United States Geological Survey, are made from cobalt acetate, chloride, and nitrate that are colored when heated or colorless when cold. This interesting phenomena is due to the change in color of the salts on the absorption of water. When dry they are blue and easily seen on paper; when damp they are pink; and when dilute, colorless. A puzzling application of this principle may be in a doll whose dress is blue in dry weather but changes to pink when subjected to dampness, as in wet weather or when the doll is held in the steam of a tea kettle. Artificial flowers are made to show the same effect.

WHERE FRUIT IS A LUXURY.

Fancy fruit is a luxury indeed at this season in Paris, according to reports of the prices paid by consumers at the choice fruit stores. Buyers seem willing to pay any price for what they want. Fancy cantaloupes sell as high as $5 each. Fancy large apples are reported selling at thirty cents each. Hothouse peaches and nectarines $1.60 each. These prices seem largely due to the extortion of the retailers, wholesale prices being not necessarily higher than in other countries, for fancy fruit.

"When I compare the two or three creditors that I have, with the millions and millions of people to whom I owe nothing, I wonder why in the world those fellows make such a confounded fuss about it."—Bill Nye.

Pomona Patent Pressure Gate

Simple in Construction
Cheap in Price
As Durable as Solid Iron
Absolutely Watertight When Closed

No Rubber or wooden facing to rot or wear out

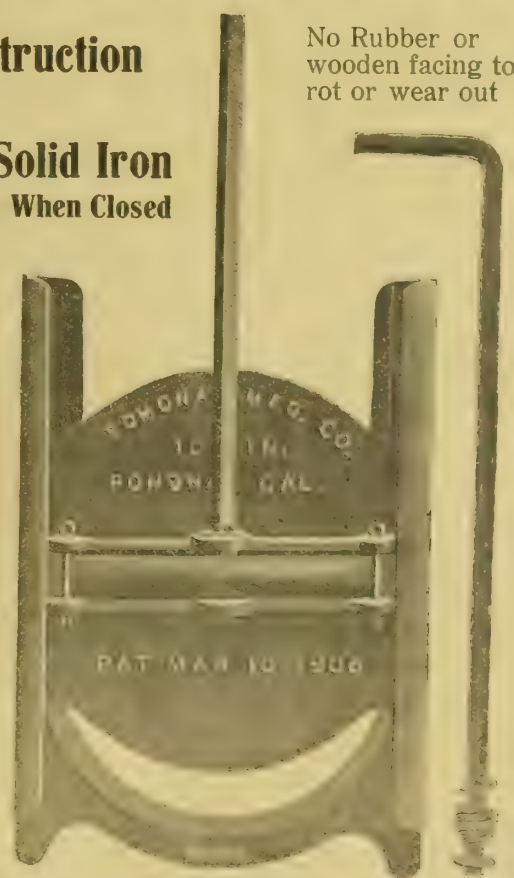
Locking mechanism is protected against rust or clogging with sand or dirt.

THE LOCKING DEVICE is the simplest made, merely a tapering screw with split tapering nut socket. It locks the cover in any desired position or locks the faces, making an ABSOLUTELY WATER TIGHT JOINT.

TWO FOOT HANDLE FURNISHED WITH EVERY PRESSURE GATE FREE.

ALSO A FULL LINE OF CIRCULAR VALVES FOR ORCHARD AND ALFALFA IRRIGATION CARRIED IN STOCK.

Write for descriptive circular and price list.



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Pomona, Cal.

For Sale—

Irrigated Alfalfa Land

Land with Water on It Now for

$27 an Acre

EASY TERMS

Where can you buy Irrigated Land for $27 an Acre . . . . ?

In the Great Yaqui Valley, where your neighbors are the most successful farmers of California, Washington, Idaho, Oregon and Canada.

The rush to Mexico is on. The American farmer is beginning to realize that the only CHEAP land—that is, GOOD LAND—left on the American continent today is in MEXICO. IT'S THE LAST CHANCE. And the American farmer is taking advantage of it.

We have less than 3000 ACRES of this land at this price, and it is going fast. Get it NOW while you can.

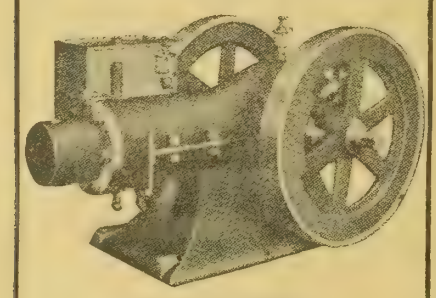
Land level as a floor—splendid irrigation system now in operation—railroad transportation — 15,000 acres now under cultivation, and American farmers behind the plows—wheat, barley, oats, corn, cotton, alfalfa, hogs.

Buy NOW—later on you'll pay more.

Chas. F. O'Brien

General Land Sales Agent

112 W. Sixth St. Los Angeles



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No spark plug, batteries, carbureter, gears or other complicated parts to get out of order.

So simple you or your boy can take it apart, reassemble and operate.

Unequaled guarantee of fuel consumption, material and workmanship.

Not the cheapest engine, but the cheapest to own and operate.

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THE SIMPLE GAS ENGINE CO.

LOS ANGELES 114 E. 8th St.

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SEED BED STOCK FOR SALE

Why not buy the best? 2 year old sweet stock all first class, clean, and well rooted. 25,000 one-year Sour Seed Bed Stock 8 in. and up.

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Home Phone, Black 177

27 N. Stoneman Ave. ALHAMBRA, CAL

Thoroughbred Poland China Swine
Barred Rock Poultry

High Grade Stock of Best Strains.
Young Stock for Sale.

M. Bassett ***Hanford, Cal***

Questions and Answers

THE EDITOR AND STAFF

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper, and sign full name and address. Unsigned communications receive no attention.

Registered Cows.

Will you please tell me in next Cultivator what letters behind a cow's name mean. I have not been in California very long. I come from Russia. I vote for first one time. I vote for you to have a vote for I think you good better know than a man like me. I most respectfully admire you, Dear Lady.—Subscriber, Parlier.

The above was sent to Mrs. Sherman. The inquirer is plainly a seeker for light and is using the Cultivator and its contributors to that end. We welcome him to California and believe he has the making of one of our best farmers. He has overcome his European prejudices enough to believe that a woman of Mrs. Sherman's type is qualified to vote and "the first one time I vote for you to have a vote." Mrs. Sherman answers his inquiry:

Letters behind a cow's name mean that she has been tested for butterfat officially and has a sworn to record made under the supervision of experiment station officials or some other officer appointed for the purpose.—M. E. S.

Is it not also possible that subscriber refers to the numbers following names of registered animals. If so, this means the numbers which accompany the animal's name in the register of the national association of the particular breed. If this does not give the information our subscriber desires, if he will come back, we will answer more fully.—Ed.

Weighing Olives.

Is it not advisable to weigh olives when preparing for pickling? In Mrs. Sherman's article on curing of olives no mention is made of the amount of fruit which the lye is supposed to cover. We have always used one pound of lye for 50 of fruit, sometimes needing to use a second and weaker solution.—Subscriber.

In pickling the olives we do not weigh the fruit as it cuts no figure if the solution is made according to formula and the olives covered completely. Are you using Greenbank or Hercules caustic soda? These run 97 per cent pure and are stronger than the common run of lye. If the olives are well stirred by drawing off some of the liquid and pouring it back again, this strength has never failed to take out the bitterness. I would not take the lye off until bitterness has gone. It will do no damage after it has neutralized the acid, but remain on the olives that are perfect without action, while acting on those that are not neutralized as yet. Do not forget the salt as it keeps down bacteria that in warm weather like this fall will do mischief very quickly. The use of salt makes the cutting, we think, a little slower than the same lye without the salt.—M. E. S.

Ration for Colt.

Am weaning six-months' old mule colt and do not wish to turn him on pasture. What would you advise feeding? Have good oat hay. Also have yearling which I am feeding oat hay and dry bran, but he does not seem to be doing well. What is the best feed for him?—G. C. R., Moorpark.

Young colts do better on alfalfa hay than on oat hay. I really think oat hay feed alone poor in quality of building up an animal. If I had no alfalfa hay and could not secure it reasonably in price, I would cut the oat hay up and moisten it and feed on it a little mill feed. This may be rolled barley four parts, one part middlings. Feed three or at least two small feeds of this daily. It is a mistake to feed once a day a growing animal, as they need it little and often. We feed the yearlings about a quart at a time. Half of that will be enough for the weanling.—M. E. S.

Grass Moth.

What is the name of the moth miller enclosed? It is a nuisance on October nights. The air is full of them. Is this the kind that destroys clothing?—Reader, Wasco.

This was referred to Prof. H. J. Quayle, and he replies that it "is one of the common grass moths; that is, the larva feeds in grass and alfalfa land, largely. It is not the clothes moth, since this species is very much smaller, measuring about one-half inch across the wings, but is of the same general color as the one enclosed. The species is not of very great economic importance, though they may occasionally appear in large numbers as seems to be the case at the present time in the vicinity of Wasco."

Devil Grass—Salt Grass.

Please tell me what the specimens are which I enclose.—Subscriber, Anaheim.

One of these is a straight case of Bermuda grass, more commonly called devil grass, one of the worst pests and yet fairly good pasture grass, and in the South used largely as a meadow grass. The other was submitted to a botanist and was declared to be syntherisma linearis, a salt grass which is closely allied to the ordinary crab grass and is also a pest in the orchard. It has been in California for some years.

Plowing Orchards.

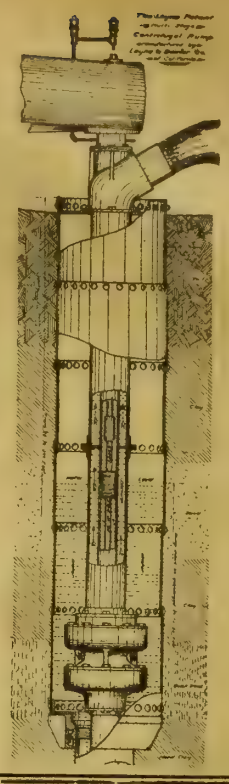
What are the best months of the year for plowing lemon and orange trees? If certain months are better, why?—Subscriber, San Fernando.

The usual plowing time is February and March. If green manuring is to be followed the crop is then in the best condition to be turned under advantageously. Some prefer plowing after the first rains of fall and then giving clean culture instead of growing green manure crops between trees. Of course, it goes without saying that summer plowing should be dispensed with, for the reason that plowing means great loss of moisture, and during the heated summer months the loss would be greater than the trees would stand. Besides root disturbance during the strongest growth of the tree would not give satisfactory results. For that reason most people prefer to do the plowing at least two weeks prior to blooming time.

Overheated in Brooder.

I purchased incubator chickens hatched on September 1st. They do not grow any feathers on their heads. Over their eyes are blue spots. I have placed piece of bluestone in the drinking water. Tried carbolated vaseline on heads without results.—Subscriber, Los Angeles.

The chicks have either been overheated, which has made them sweat and so retard the feathering, or they are from immature stock. Do not give



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All Kinds of Oil Storage Tanks.

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All wires are heavily galvanized 80 rod spool of Ideal galvanized **Barbed Wire $1.40.** Write to-day for large free Catalog showing 100 different styles and heights of fencing

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Snow's Nursery

Citrus Stock a Specialty

Will accept future contracts on Citrus Stock; also Apricots

H. K. Snow, Jr., Prop. Oxnard, Cal.

them bluestone in the water but feed them good nourishing food and give them plenty of milk to drink, grease the heads a very little with vaseline and give them lettuce to eat.—Mrs. A. B.

Chicken Pox—Roup.

One or two of my young turkeys have hard bunches around the wattles and even on them. One hen has swelling the size of a large thimble under one eye and there is pus in it. We have isolated her. Turkeys have free range, clean water, good shelter, milk, barley, grit and charcoal.—Subscriber, Calexico.

Your turkeys have chicken pox. Grease the spots with carbolated salve three times a week till cured. Cut the lump that has pus in and squeeze it gently out and swab out the place and paint it with iodine. You could use the same remedy without cutting on the other hen's lumps. Do not let the iodine run over the wattles as it will burn. You always have to handle iodine carefully. Usually one application will cure.—Mrs. A. B.

On Shares.

What are the usual terms for planting alfalfa and potatoes on shares? If alfalfa is planted, if owner furnishes good river bottom soil with abundance of water, what proportion of the crop should he have? When planting potatoes if A furnishes land what part of the crop or rent should he receive?—Subscriber, Lakeside.

It is impossible to answer such a question because of the fact that conditions vary so much, nearness to transportation, richness of soil; and other factors, so that each section would have to figure out its own system. Under the conditions given we presume rent would vary from one-fifth to one-third; perhaps with very rich land even more than one-third would go to the owner. Will some of our readers who have had experience write us?

Weevil.

I send perforated wheat and with it insects which are in my feedhouse. Think they came with wheat I bought. They do much damage. How can they be exterminated?—Subscriber, Napa.

The insects are good lusty weevil and doubtless are doing vast damage if in any large supply. They may be quickly eradicated by the use of carbon bisulphide. The infested house or room should be closed as tightly as possible by stuffing papers or cloths in every crack and getting the door ready to batten down as closely as possible. Then place the bisulphide in dishes on top of the wheat, using one pint to 1000 cu. ft. of space. Leave closed overnight. Do not have lantern or any light near when working with the bisulphide for it is highly inflammable and even explosive. The same caution must be followed when opening up the house after the fumigation. Room must be thoroughly aired before a light is brought in.

Seed Potatoes.

What kind of seed potatoes should one secure for early planting? What is the best way of storing until planting time so they will come up quickly?—Subscriber, Long Beach.

The variety depends upon your market. One of the old favorites is the Early Rose. The Early Ohio is also occasionally planted, and the Burbank is one of the best. As to storing, if kept in a dry, cool place that is all that is necessary. If kept in the dark they are less liable to sprout.

Pure Bred Jerseys.

Where is the nearest place to see pure-bred Jersey cows?—Subscriber, Los Angeles.

We regret that there are no Cultivator advertisers who are handling Jerseys near Los Angeles. We will endeavor to obtain for our subscriber the information desired and give it to him through the mail. We may mention the Whiting Jersey Stock Farm at Heber, Imperial County. Surely there is an opening for the breeder of pure-bred Jerseys to announce himself to Cultivator readers. Of course there are many such breeders up through the San Joaquin Valley.

Salt for Stock.

Is rock salt for live stock desirable, especially in the dairy?—John Jirku, Los Angeles.

It is perhaps well to have a piece of salt lying where stock may reach it, but we have seen a piece of salt left for nearly two years in the manger, and so far as we could determine, not diminish a particle. It is claimed that California hay supplies sufficient salt.

Poll Tax.

Is a person owning land compelled to pay poll tax?—Subscriber, Brawley.

If the person is so unfortunate as to be a male, he certainly has to pay his poll tax unless he is 60 years of age or older or is a member of a volunteer fire department or the militia. The state attorney general has ruled that notwithstanding woman has been granted the franchise, she is not compelled to pay the poll tax.

Biliousness.

I have some Barred Rocks which turn yellow around the eyes and comb. I am feeding Egyptian corn in the head and cooked barley as a mash. They are in green alfalfa. What would cause the yellow color?—Subscriber, Bakersfield.

Your hens are bilious. This usually comes from overfeeding with too starchy ration and too little exercise. Give a dose of fifteen grains of epsom salts or give the whole flock epsom salts in the drinking water for a week in the proportion of one tablespoonful to a gallon of water. Give more green food and less grain.—Mrs. A. B.

Salt Grass.

I send grass which is in my garden and getting worse all the time. Pull it and cut it off but it continues to spread. Some call it salt grass, some witch grass. I should think it might be wire grass, it is so tough.—Subscriber, Lakeside.

This is salt grass, distichlis maritima, or marsh spike grass, found near the coast on both sides of the continent and will thrive on ground even crusted with alkali. Miners have considered it a good indication of water. There is no royal road to the destruction of this pest. Salt in large quantities is sometimes used and distillate in exceptionally hot weather may be partially successful, but the best method of all is clean culture. If in alfalfa where clean culture is not possible practically the only method is to plow up the field and give a year or two to cultivation of some root crop.

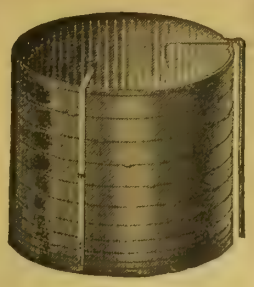
Belgian Hares.

Please tell me where I can get practical information on the raising of Belgian hares?—Subscriber.

Write Caldwell Bros., Los Angeles, for "Book of Hares."

Possibly Cowpox.

What is the cause, and cure (if any) of the itching sores that come on some milkers' hands? Dry or wet milking affects the same, and washing the



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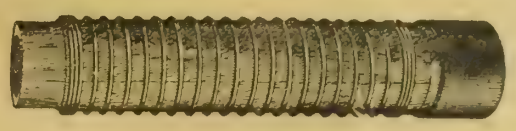

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Grape Vines Table, Raisin and Wine Varieties

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When writing advertisers, mention Cultivator.

cow's udder previous to milking does no good; there is no dog-fennel in our pasture; the cows never wade in mud and do not sleep in filth of any kind. Their teats sometimes get a little sore, but that does not seem to make any difference. The California Cultivator is O. K.—New Subscriber.

We cannot be sure from the description, but imagine the trouble may be cowpox, which is a form of contagious inflammation of the udder and does not spread from animal to animal except by the hands of the milkers. It sometimes attacks horses, the infection being carried presumably on the hands of milkers as they go to the horses. The only treatment is the healing of the sores, and as milking is one cause of their remaining, the greatest care must be observed to do this as gently as possible. Some cases are so bad that a milking tube is necessary. If there are any sores they should be washed frequently with one-half ounce hyposulphite of soda in a pint of water.

Bulletin 71.

An article appearing in a recent Cultivator referred to Bulletin 71 which treats of soil bacteriology. For the benefit of inquirers who have asked regarding securing it, we may say that by writing to the Editor and Chief, Division of Publications, Washington. D. C., and sending 15 cents, it may be secured.

A Selfsucking Cow.

To stop a cow from sucking her own milk, in a humane way, put a good leather halter on the cow as you would on a horse. Next procure a good sursingle, and put it on like a riding saddle. Put a ring on the sursingle so that it comes under the body of the cow. Connect the ring on the sursingle and the ring on the halter with a strong stick; just how long the stick should be a little experience will tell. The stick being between the legs will stop the cow from reaching her bag with her mouth. There is comparative freedom for the cow in this plan. —Wm. Young, Pasadena.

GROWING.

The Fresno Nursery Company is sending out announcement that Mr. Charles B. Harkness, formerly with the Fancher Creek people, has taken an interest in the Fresno Nurseries. With his twenty years of experience in this work the Fresno people feel they have a most valuable man in Mr. Harkness. Of course Mr. Frank H. Wilson and Mr. Charles A. Chambers will both remain with the concern. The old time slogan of "True to Name Nursery Stock" will remain the motto of the company.

Legal

Edw. L. Payne, attorney, 301-304 Douglas Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr Payne is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Rental of Land.

A leases to B a certain piece of land, rent to be paid quarterly, lease to expire Jan. 1, 1912. A sells land to C. B receives no notice of sale for two or three months; lease has never been changed or assigned to C. Whom shall B pay rent to and has C any claim on rent, or can C take possession of place before lease expires?—Subscriber, Butte County.

B should pay rent to C unless it is also claimed by A. In that case a suit to interplead the two claimants might be necessary. C cannot take possession of the place before the lease expires, unless he did not have any notice (actual or record) of the existence of the lease at the time he purchased.—E. L. P.

Recording Agreement.

If B buys a piece of property of A through agent and then A has a trust company act as a trustee, after purchase B finds he cannot get his agreement recorded; can B get his money back?—Subscriber, Redlands.

The question does not state why B cannot get his agreement recorded, and cannot be answered for that reason.—E. L. P.

Pastured Horse.

A puts horse to pasture on B's ranch at $1.50 per month. Horse bothers neighbor's alfalfa, so B catches horse and works him without notifying A. Is B entitled to collect pasture bill on horse.—Subscriber.

A has a right to setoff or counterclaim against B for the value of the horse's services.—E. L. P.

Acquiring Title.

A owns 20 acres of land for which he has a good title. 20 acres joining it he has used for several years and has enclosed within a fence. There being a mistake in the original survey the government has no record of the land. A pays tax to the county on said land. Can he acquire a title or hold the land by paying tax to the county for a certain number of years? If not, how can A acquire a title?—Reader.

A cannot acquire a title by paying taxes on government land. I suggest that A make inquiry of the Commissioner of General Land Office, Washington, D. C.—E. L. P.

Inheritance.

I wish you would publish in your paper a brief statement of the laws of inheritance in the state of California, especially as to what part of a husband's property goes to the wife on the death of the husband, and what part of the wife's property goes to the husband on the death of the wife. Also publish a simple form of will by which a husband or wife can leave all his or her property to his or her married partner. Is there any simple form of agreement by which in case of death of either husband or wife all of the property belonging to either or both will belong to the remaining partner. Where real estate is deeded to a man and his wife, both being named in the deed, and the words, with right of survivorship in the deed, does it give the surviving partner full ownership of all the interests of both, in case of the death of either?—Subscriber.

If the decedent leaves a surviving husband or wife, and only one child, or the lawful issue of one child, in equal shares to the surviving husband, or wife and child, or issue of such child. If the decedent leaves a surviving husband or wife, and more than one child living, or one child living and the lawful issue of one or more deceased children, one-third to the surviving husband or wife, and the remainder in equal shares to his children and to the lawful issue of any deceased child, but if there is no child of decedent living at his death, the remainder goes to all of his lineal descendants. If the decedent leaves no issue, the estate goes one-half to the surviving husband or wife, and the other half to the decedent's father and mother in equal shares, and if either is dead the whole of said half goes to the other. If the decedent leaves neither issue, father, mother, brother, sister, nor the children or grandchildren of a deceased brother or sister, the whole estate goes to the surviving spouse.

A simple form of will is:

"I hereby give all property of which I may die possessed, of every kind and description, and wheresoever situated, to....., and hereby nominate .....executor of this my last will and testament and hereby revoke all other wills by me made. There is no simple form of agreement by which the property of one spouse will belong to the other in case of death.

If the deed is otherwise properly drawn, the survivor would have full ownership of the property, but a court proceeding would have to be had in order to determine the death of the other partner.

Title.

Four acres of unimproved land was deeded to my wife shortly after our marriage. I built on it and planted orange trees; having sold a lot which I owned before our marriage, for $600, to assist in building, etc. My wife died, intestate, seventeen years ago. Our four children are now all of age. What is my title in this place? How could I proceed to sell; all the children consenting to sale?—Subscriber, Colton.

One-third of the property belongs to you, and two-thirds in equal shares belongs to the children. You should probate your wife's estate, and have the children deed their interests to you, which deed should be brought to the attention of the probate court in your probate proceedings, and in your petition for distribution, ask to have all of the estate distributed to you. That will make good title in you so that you can sell the property.—E. L. P.

To make a delectable lemon pie, add the pulp of a banana to the custard before turning into the paste-lined tin. Cover with a meringue when it comes from the oven.

ROEDING & WOOD NURSERY CO.

The Roeding & Wood Nursery Company transferred most of its Tulare County nursery interests to the La Habra Valley lands east of Whittier, in Los Angeles County, some months ago. The company is now installing a central distributing house in Los Angeles which will be headquarters. A new building is being constructed on a small tract of land at 1603 E. Washington St., and several thousand feet will be covered with lath houses for the receiving of citrus, tropical and ornamental stock grown by the company. This place will also be the principal distributing point for Southern California for the plants of the Fancher Creek Nursery Co. of Fresno. The present temporary office of the company is at 237 Franklin St., but Mr. Wood hopes to have the main office ready for his reception by December 1st.

WINTER FERTILIZING.

In the winter nitrates are formed in the soil to a less extent than in any other season; hence to encourage growth and the formation of strong fruit buds, some nitrate of soda should be used now and occasionally through the winter.

With suitable applications of superphosphates now, the nitrate will insure the formation of moderate amounts of available carbonate of lime, which is badly needed in many soils.

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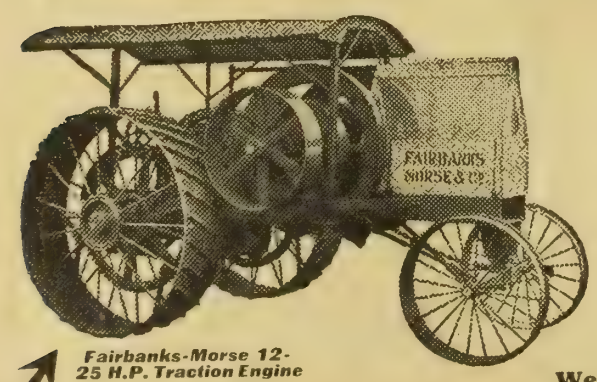

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Household Department

IF WE HAD BUT A DAY.

We should fill the hours with the sweetest things
If we had but a day,
We should drink alone at the purest springs
In our upward way;
We should love with a lifetime's love in an hour,
If the hours were few;
We should rest, not for dreams, but for fresher power
To be and do.

We should guide our wayward or wearied wills
By the clearest light;
We should keep our eyes on the heavenly hills
If they lay in sight;
We should trample the proud and the discontent
Beneath our feet;
We should take whatever a good God sent
With a trust complete.
We should waste no moments in weak regret
If the day were but one.
If what we remember and what we forget
Went out with the sun;
We should be from our clamorous selves set free
To work or to pray,
And to be what the Father would have us be,
If we had but a day.

—Christian at Work.

ON THE ROSEBUD.

Bessie looked down from her seat on the high freight wagon with mingled emotions. Here she was goddess of all that surrounded her, for beneath her and Jim Derk were all her worldly possessions, converted into lumber, nails and utensils with which to take up her abode upon the homestead. Jim had begun to feel a warm interest in this little "bunch of calico," as he designated Bessie, in spite of the fact that she was clad in a neat and stylish suit of blue cheviot. She was just a little different. He was accustomed to the ancient maiden type of "homesteadresses," of which there were many upon the Rosebud, but this girl was different. He had gazed at her as she alighted from the train the day before, and had beamed with satisfaction when she approached him and made arrangements with him to freight her and her possessions over the fifteen miles of prairie that separated her claim from the village of Brazos. She was a plucky little girl; he was sure of this, else how had she dared to come out into this unsettled country without any help or masculine protectors.

Jim was one of the easy going Westerners who had always been in the country. It had never occurred to him that the land might have a value; he had never used his homestead right.

"Land!" he was wont to say to his fellows of the old West. "Why, there's more land around here than you can shake a stick at. What good is it, anyway? It won't grow nothing but steers, and ten steers on a quarter at that." When the homesteaders began flocking in by the trainload he still maintained his contempt for the land, and a supreme contempt for the people who came to live on it fourteen months for the sake of obtaining a patent from the government for 160 acres.

"Them fellers' time," he would say, "sure can't be worth much. They come out here and plow up five acres and raise a little corn and potatoes, and loaf around fourteen months, and then pull out and go away with the deed to a half mile square of land in a country where a township ain't no more than a bagatelle." But he had found that he could make big money hauling lumber and building shacks for these people, and that accounted for his present occupation.

This particular morning, as he rode along with Bessie beside him, he came to a conclusion. Coming to a conclusion was no easy matter for Jim. His type of men are ever on the van of the drift of humanity, just because they find it so difficult to come to any definite conclusion to take root on any particular spot. But the conclusion that Jim arrived at did him credit this time. He made up his mind to file on the nearest claim he could get to Bessie's, and to assume the role of guardian angel, whether she liked it or not. When they arrived at the claim, Jim picketed his horses and fed them a liberal supply of oats, and proceeded to help himself enormously to the dainty picnic lunch that Bessie had prepared. She watched the cans of salmon, pork and beans, etc., disappear with something akin to awe.

In the afternoon Jim hastily put together the shack which would be Bessie's residence, and left, promising himself to be her nearest neighbor just as soon as he could get his foot in the land office.

That night Bessie slept with one eye open until early in the morning, when exhaustion overcame her fears, and she fell asleep, not to awaken until nearly noon. She immediately got up, and began to hustle around, putting her furniture in order. When she had finished, it occurred to her that she had not eaten anything since the night before and was nearly famished. So she prepared a light supper, and was terribly startled when she heard a heavy wagon drive up. She peeked out of her one window, and when she saw that Jim had returned she was very much elated, although surprised. He told her that he had filed on a claim half a mile down the creek, and intended to buid there that night. What Bessie's emotions were as she listened to this recital it is not necessary for us to know, but it is easy to imagine that they alternated between gratification and trepidation.

After supper he drove away with his load and began the erection of his shack. He slept in his wagon that night, keeping one hand at his belt, where he could reach his "Colt's" for instant use, as was his habit.

He was sleeping soundly, dreaming about that "neat little bunch of calico," when he thought that he was suffocating and that someone was trying to pull his feet away from him. He awoke from the nightmare to find that he had not altogether been dreaming, for an oozy smelling rag was laid over his mouth and nose, and someone had just succeeded in pulling taut a noose around his feet. He jerked the rag away from his mouth with his left hand and drew the revolver with his right, letting fly on the instant at the figure that had just straightened up after tying his feet. The thing leaped into the air and fell in a gruesome heap. After a few convulsive struggles it lay still.

Jim had no time to attend to this, though, for a second figure with re-

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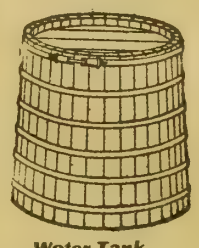

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Upon request we will gladly quote price on any not included in this list.

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CULTIVATOR PUBLISHING CO.,
115 No. Broadway,
Los Angeles, Cal.

volver leveled came running up. Jim felt something hit him in the cheek and saw the wagon splintered where a bullet had crashed through the side. He rose on one elbow and shot twice, though he had no time to aim, for another bullet whistled through his sombrero. His second shot was followed by a groan and then came voluble curses. His bullet had evidently found a mark of some kind. He looked over the side of the wagon box to find the attacker hunting on the ground for his revolver which had been dropped when Jim's bullet went through his wrist. Jim covered him and told him to get up off the ground and throw up his hands. The badman rose and Jim told him to cut the rope that tied his feet.

When the two were close enough to recognize, both were dumfounded, for Jim recognized Tom Scranton, the crown leader of the gang of desperadoes that had a record of crime to answer for in nearly all counties of the reservation. Tom cut the rope with his left hand for his right dangled helplessly.

"What in the h—— are you made of, man?" said Scranton. "I put enough chloroform on that rag to put a regiment to sleep."

Jim realized that his troubles were far from finished, so he tied up Scranton and gagged him. Then he reloaded his revolver and jumped on one of his horses and made for Bessie's shack. He knew that Tom's gang worked in squads of four, so he expected to find two more engaged in robbing Bessie. His heart was pounding against his ribs as he leaned forward urging Pinto to his best speed. When a few rods from the house, he dismounted and crawled slowly to the shack. Standing up he could look in at the window. A dim light burned in the corner. As he had expected, Bessie lay on the cot with a cloth over her face. They had not bothered to tie her, depending on the chloroform to do its work. He realized that he must move carefully. Although his heart was almost turning summersets, his exterior manner was as cool as if his only thought was to drive his mustangs along the road as he did every day.

He drew both revolvers and crawled to the door which stood open a crack, the lock having been pried off. He opened the door quickly and strode in to find two men bent over Bessie's trunk in the corner.

"They say the gal had $500 on her," said Knutson, whom Jim recognized from his picture in the "Wanted" advertisement.

Jim covered them both with his revolvers. "Well, Ole," he said, "I guess this is one on you."

The men threw up their hands knowing that they had a better chance to beat the law than they had to escape Jim Derk's gun. Jim made Ole tie up his mate and then he tied Knutson himself. Having done this he was ready to give his attention to Bessie. He pulled the rag from her mouth and began such measures as he had heard of to resuscitate people who are drugged.

"If she is dead, you'll pay for this," he grated through his set teeth and the two men tied on the floor curled their lips in scorn, for they still had a chance and they were used to narrow escapes. It is not until real death approaches that these "bad men" lose their nerve.

While Jim worked a locket that Bessie wore by a small chain about her neck unsnapped and Jim saw the picture there. This was the greatest shock to Jim of all that eventful night, for the picture was the same as the one he had carried in all his wanderings, the picture of his mother. Then he recognized the resemblance between Bessie and the picture.

"My little sister," he breathed, "my little sister whom I never expected to see again, and now perhaps she is dead. O, you demons! I'll kill you both for this." He sat upon the cot and raised her head in his lap and stroked the soft brown hair. Great dry sobs shook Jim as he sat there. Even Olson was affected at this sight of the awful grief of a strong man.

Then Bessie opened her eyes, slowly as if arousing from a deep sleep. She was not entirely awake. She dreamed of the old days when her big brother had rocked her to sleep on his knee.

"Brother, brother Jim," she whispered.

"My own little sister," and Jim understood then why he had taken such an interest. The robbers on the floor were forgotten for the moment. At last Bessie did awake. No explanations were needed, for they both understood.—Farmer and Breeder.

CRUMBS OF COMFORT.

Conscience is harder than our enemies.

No swords cut so fiercely as an evil tongue.

Women are always better or worse than men.

Pleasure, however innocent, is criminal in excess.

He who has most of heart knows most of sorrow.

Religion is the best armor in the world, but the worst cloak.

Let us believe that love goes with us to the shore unknown.

The best sort of revenge is not to be like him who did the injury.

Nothing can wake the soul's strong instinct of another world like music.

Beauty is worse than wine; it intoxicates both the holder and the beholder.

In this topsy-turvy world it seems that all the heaviest wrongs get uppermost.

Man must be prepared for every event of life, for there is nothing that is durable.

There is in the heart of woman such a deep well of love that no age can freeze it.

There is a future left to all who have the virtue to repent and the energy to atone.

Our virtues and our children are the more to us the more we have had to suffer for them.

Society is like a large piece of frozen water, and skating well is the great art of social life.

To be deprived of the person we love is a happiness in comparison with living with one we hate.

In sickness we should not so much say we are getting better of our pain, as we are getting better for it.

We may prostrate ourselves in the dust for having committed a fault, but it is not best to remain there.

The slightest sorrow for sin is sufficient if it produces amendment, and the greatest is insufficient if it does not.

The tale-bearer and the tale-hearer should both be hanged up back to back, one by the tongue, the other by the ear.

To give pain is as much an offense against humanity as against good breeding, and surely it is as well to abstain from an action because it is sinful as because it is impolite.—Exchange.

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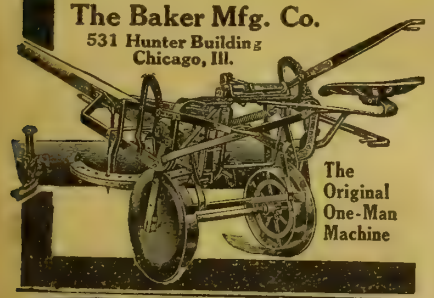

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HOMELY HINTS.

A few of the essentials, after the ironing table itself and the irons, are an iron stand, an iron holder with an asbestos lining, a bit of beeswax tied up in a piece of cheesecloth, a bowl of warm water with a sponge or a piece of soft linen, which may be used to dampen scallops and edgings which have become too dry to iron well, a piece of paper folded in several thicknesses, on which to test the heat of the iron and to wipe any black smirch from it. Take your clothes from the line as soon as possible after they are dry. They are likely to become too stiff if left out longer than necessary. Be especially careful to bring starched clothes in as soon as they are dry. When it is cold the freezing takes out the stiffness, and when the weather is damp the clothes become limp.

Carbonol is a coal tar product and if you add a dash of it to water used in cleaning, you will find that the water immediately becomes more effective in dissolving dirt and grease. As Carbonol will not hurt anything, it is a good idea to add it to the water anyway, whether you have a difficult cleaning job or not.

Milk will sour very quickly if put into dishes that have not been scalded.

It is advisable to have all bed linen and clothing from a sick room kept in boiling water for at least fifteen minutes before going to the laundry.

Stewed apples or pears or peaches covered with custard and meringue, put in oven to brown and served very cold, is a nice dessert.

Keep the range free from soot in all its parts, clearing all the flues of soot and dust that quickly accumulates, and regularly remove all slinkers that get fixed in the bars and inside the grate. A hot-air passage clogged up with soot will prevent the oven from baking well.—American Cultivator.

MUSTARD.

Two or three teaspoonfuls of ground mustard stirred into half a pint of water will act very promptly as an emetic, and it is easier to take than salt and water. Equal parts of ground mustard and flour or meal made into a paste with warm water and spread on a thin piece of muslin, with another piece of muslin laid over it, forms a good "mustard plaster." It is almost a specific for colic when applied for a few minutes over the "pit of the stomach." It acts as a counter irritant by drawing the blood to the surface; hence, in severe cases of croup, a small mustard plaster should be applied to the back of the child's neck. The same treatment will relieve many cases of headache. A mustard plasetr should be moved about over the spot to be acted upon, for if left in one place it is liable to blister. It acts as well when at a little distance from the affected part. A good substitute for mustard plasters is "mustard leaves." They may be obtained a dozen in a box. They are perfectly dry, and will keep for a long time. For use it is only necessary to dip one in a dish of water for a minute, and then apply it.—Ex.

ADDING INSULT TO INJURY.

First Hen: "Stopped laying?"

Second Hen: "Yes. They expect us to lift the mortgage on the auto that runs over us."—Harper's Bazar.

EXPLAINED.

"Katie," said Mike, "if ye're after listening tonight and hear an inaudible whisper, 'tis mesilf that's keepin' quiet."—Harper's Bazar.

ADHESIVE PLASTER.

Here is a discovery of mine which has been of great help to me, and it will doubtless interest housewives who have had the experience of paring large quantities of fruit for canning or drying, and as a result have had a very sore thumb from the tiny cuts made by the paring knife.

A few minutes before beginning to pare the fruit, take a small square of adhesive plaster, warm it and place on the center of the right thumb. This will not come off, even if it is necessary to wash the fruit, but when through paring moisten slightly with benzine or alcohol, and it can be easily removed.—A. L. M., in Ladies' World.

LEMON SYRUP.

For an excellent lemon syrup that may be kept on hand for emergency use pour three quarts of water over four pounds of granulated sugar, and let it stand, stirring occasionally, until the sugar is completely dissolved; then set over the fire and heat gradually until the boiling point is reached. Boil ten minutes; then add three pints of lemon juice, and strain. Turn the syrup into perfectly clean bottles; cork tightly, and keep in a cool place. For a plain lemonade dilute the syrup with ice or charged water to suit the taste.—Harper's Bazar.

SHOES.

I think new shoes the finest things in
all the whole wide world.
When Nurse has changed my frock
and made my hair look nice and
curled,
And buttoned up my shoes, I can't do
anything but look
Straight at my feet, and feel just like
the princess in the book.
And even if they pinch my toes, I
never seem to care;
I'd almost rather have them, for it
makes it true they're there.
If you could wave a wand and let me
have the things I'd choose,
I'd take a shiny, squeaky, pinchy pair
of brand-new shoes.
—October Woman's Home Companion.

HIS ECONOMY.

The children in the Blank family were taught habits of neatness at the table by being compelled to pay a fine of one cent for every spot they put on the tablecloth. One day Harold, a boy of seven years, was discovered rubbing the overhanging part of the cloth between his fingers, and, when taken to task for it, he said:

"Why, Mummy, I was just trying to rub two spots into one!"—October Woman's Home Companion.

It may not be generally known that we have, in a nickel five-cent piece of our coinage, a key to the tables of linear measures and of weights. The diameter of this coin is two centimeters, and its weight is five grammes. Five of them placed in a row will, of course, give the length of the decimeter, and two of them will weigh a decagramme. As the kiloliter is a cubic meter, the key to the measure of length is also the key to measures of capacity. Any person, therefore, who is fortunate enough to own a five-cent nickel, may carry in his pocket the entire metric system of weights and measures.

Johnnie—Pa, won't you please buy me a microbe to help me with my arithmetic?

Papa—What good will a microbe do you?

Johnnie—I just read in this paper that they multiply rapidly.—Philadelphia Bulletin.

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You need the most powerful and reliable light you can get when loading the wagon for market in the early morning.

Rayo lanterns are the most powerful and reliable lanterns on the market.

They do not flicker, but burn with a steady, brilliant light. They will not blow out. They are economical, because, besides being moderate in price, they give you the greatest light value for the oil they burn.

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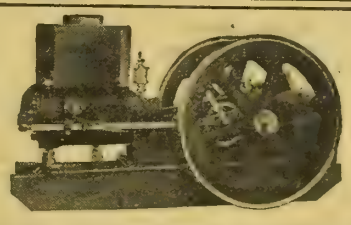

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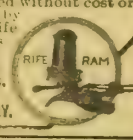

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ANDERSCH BROS., Dept. 100 Minneapolis, Minn.

Yolo County is harvesting its second crop of wine grapes.

San Francisco-Los Angeles Produce Markets

Los Angeles Market

LOS ANGELES, Nov. 15, 1911.

Butter.

A weakening in the butter market resulted in a drop to 31½c on extras on Tuesday. Condition easy at present.

Prices to trade 2½c in advance of the following Produce Exchange quotations:

Extras	31½
Firsts	30
Ladles	25
Country	23

Cheese.

Local Anchor	16
Oregon Daisy	17½@18
Northern Fresh	16@17
Domestic Swiss	18
Imported Swiss	33

Eggs and Poultry.

Decreasing supply and rather larger demand boosted eggs one point on Tuesday. Market very firm at this time.

Buying prices f. o. b. Los Angeles are:

Local Ranch Candled	47
Case Count	43
Eastern	32@34
Eastern storage	25@26
Pullets	26

Dealers pay for live poultry f. o. b.:

Hens, lb	12@16
Roosters	8
Broilers	18
Fryers	12
Roasters	12
Turkeys	19@22
Ducks	13
Geese	12
Guinea hens, doz	4.00
Squabs, doz	1.75

Live Stock.

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs	7¼
Prime steers	6
Heifers	6
Calves, lb	6½
Sheep, ewes, head	4.75
Lambs, head	3.75@4.25
Wethers	5.00@5.60

Potatoes.

Wholesale prices are:

Sweets, yellow, cental	1.50@1.75
Highlands, cental	1.65@1.85
Salinas	1.90@2.10
Lompoc	2.50
Oregons	2.35

Onions.

Wholesale quotations:

Australian Brown, cental	1.75
Silverskins, sack	1.75@1.85
Yellow Danvers, cental	1.75
White Wax	1.50@1.65
Garlic	5@6

Vegetables.

Wholesale quotations:

Artichokes, Northern, doz	90@1.10
Beets, doz bunches	35
Bell Peppers, lb	4@5
Brussels Sprouts, lb	8@10
Beans, Limas	4@5
Beans, Green and Wax	4@5
Chilis, Green	3@5
Chilis, Red	15@16
Cucumbers, lugs	60@75
Cabbage, sack	65@75
Cabbage, Red, lb	3@3½
Cauliflower, doz	50@65
Celery, New, crate	2.35@2.50
Carrots, sack	90@1.00
Corn, lug	50@60
Egg Plant	3@5
Horseradish, lb	13½
Onions, Green, doz bunches	15@20
Kohl-rabi, doz bunches	40
Leeks, doz	35@40
Lettuce, crate	90@1.10
Mushrooms, lb	50@1.00
Oyster Plant, lb	15@20
Okra	6@8
Peas, lb	5@7
Parsnips, doz bunches	45
Parsley, doz bunches	25@30
Turnips, sack	90@1.00
Radishes, doz bunches	15@20
Rhubarb, Crimson Winter	90@1.00
Spinach, doz	15@20
Squash, Summer	50@60
Spearmint, doz	25@30
Tomatoes, lug	40@50
Turnips, sack	1.00@1.25
Watercress, doz	35@40

Citrus Fruits.

Valencias	4.50
Grapefruit	3.00@6.00
Lemons	3.50@4.00
Limes, hundred	1.25

Fresh Fruits.

Wholesale prices on the market are:

Alligator Pears	1.25@1.50
Apples, Bellefleurs	85@1.10
Apples, Spitzenbergs	1.10@1.50
Apples, Pearmains	1.25
Apples, Jonathans	1.90@2.35
Bananas	4½
Casabas, crate	1.50@1.75
Cantaloupes, standard	1.25@1.50
Figs, box	75@1.25
Grapes, Thompson Seedless, lb	3
Grapes, Black Hamburg, lug	65
Grapes, Muscats	75@90
Grapes, Tokays	85@1.00
Grapes, Cornichon	1.10
Loganberries	6@8
Peaches, lug	1.50@1.75
Pineapples	8@10
Quinces, lug	80@1.00
Persimmons	1.00@1.25
Pomegranates, lug	75@1.25
Plums, Clymans, lug	1.50
Plums, Tragedy	1.50
Pears, Bartlett, box	1.25
Blackberries,	10
Raspberries	10@12
Strawberries	8@12
Watermelons, lb	¾@1

Dried Fruits.

Wholesale prices to retailers are:

Evaporated Apples, fancy, lb	11@11½
Apricots	16@17
Figs, box	1.50@1.75
Peaches	11@12½
Nectarines	12
Pears	12@13
Prunes	7½@15
Plums	10

Beans, Dried.

Wholesale quotations:

Limas	5.60@5.75
Black Eyes	4.50@5.00
Pinks	3.85@4.00
Lady Washington	4.75
Small White	4.75
Garvanzas	4.50
Bayous	4.50@5.00
Lentils	6.00@7.00
Mexican Reds	4.75@5.00

Nuts.

Wholesale quotations:

No. 1 Soft Shell Walnuts	15@16
No. 1 Hard Shell Walnuts	13½
No. 2 Walnuts	11
Almonds, IXL, lb	19@20
Pecans, polished	15@17
Pecans, Eastern	8
Peanuts, California	6
Pine Nuts	18

Honey.

Wholesale quotations:

Extracted Water White	8½
Extracted Light Amber	7½
Comb Water White	16@17
Light Amber	13@14
Beeswax	30

Hay.

Buying prices f. o. b. cars Los Angeles:

Barley Hay	14.00@15.00
Wheat Hay	13.00@14.00
Tame Oats	15.00@17.00
Alfalfa	13.00@14.50

Grain.

Wholesale selling price f. o. b. Los Angeles:

Wheat, new, cental	1.75@1.80
Corn	1.70@1.95
Kaffir Corn	1.80
Millet	3.75
Popcorn	4.75@5.00
Egyptian Corn	1.80
Red Oats	2.00
Seed Barley	1.50
Milo	1.95

Feed Stuff.

Wholesale selling price f. o. b. Los Angeles:

Alfalfa Meal	1.15
Beef Scrap	3.00
Bone Meal	2.05
Charcoal	1.95
Cracked Corn	2.00
Cracked Wheat	1.90
Shorts	1.85
Bran	1.60
Oil Cake Meal	2.60
Feed Meal	2.05
Rolled Barley	2.10
Rolled Oats	2.00
Middlings	1.85

Do your cows milk hard? Send 50 cents for teat expander. O. J. Weber Co., 225-227-229-231 East Sixth St., Los Angeles, Cal.

Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 225-227-229-231 East Sixth Street, Los Angeles.

San Francisco Market

SAN FRANCISCO, Nov. 14, 1911.

Butter.

Butter declined last week, and has since held steady at present quotations.

Prices to trade 2½c in advance of the following Produce Exchange quotations:

California Extras, lb	31½
Prime Firsts	28
Firsts	27
Seconds	24

Cheese.

California Flats	13½@16½
Cal. Young America, fy, new	15@15½
Oregon, fancy	14½

Eggs and Poultry.

Eggs show a drop of one point during the week. In fact, a decline of three points was made last week, but this was recovered, and now extras stand at 51c.

Official quotations of the San Francisco Wholesale Dairy and Produce Exchange are:

Fresh Ranch Extras	51
Firsts	45
Seconds	28
Select Pullets	43
Storage Extras	27
Hens	4.00@9.00
Fryers, doz	5.00@6.00
Ducks	4.00@7.00
Broilers	3.00@4.50
Roosters, doz	4.00@9.00
Geese	2.00@2.50
Goslings, pair	2.00@2.25
Pigeons	1.50@2.00
Turkeys	21@23
Squabs	2.00@3.00

Live Stock.

San Francisco prices, gross weight:

Steers	4@5¾
Cows and Heifers	3@4¾
Calves, lb	5½@6¾
Hogs	6½@6¾
Wethers, No. 1	3¾@4
Lambs	4½@5
Ewes, No. 1	3¼@3½

Potatoes.

Wholesale market quotations:

River Whites, cental	1.10@1.35
Alamedas	1.00@1.50
Sweets, cental	1.75@1.85
Salinas Burbanks	1.65
Northern Burbanks	1.45@1.60

Onions.

Yellow, New	1.00@1.25
Garlic, new, lb	3@4

Vegetables.

Wholesale quotations:

Asparagus, box	1.00@1.75
Beans, String	4@5½
Beans, Wax	2½@4
Limas	3@5
Bell Peppers, box	75@1.00
Cabbage, cental	75@85
Cauliflower, doz	50@60
Carrots	50@65
Cucumbers, box	75@95
Corn, sack	50@1.25
Chile, box	35@90
Celery, crate	2.00
Egg Plant, box	40@85
Lettuce, crate	75@2.00
Okra, box	65@1.00
Peas, sack	1.75@2.00
Hubbard Squash, sack	65@75
Summer Squash, lug	65@1.25
Squash, Marrowfat	50@65
Tomatoes, box	35@75
Turnips	60@75

Citrus Fruits.

Valencias	3.25@4.50
Grapefruit	3.25@4.00
Lemons	2.00@6.00
Limes, Mexican	4.50@5.00

Cream Separators, all sizes and prices. O. J. Weber Co., 225-227-229-231 East Sixth Street, Los Angeles.

Fresh Fruits.

Apples, Bellefleurs	75@1.10
Apples, Newtons	1.00@1.25
Apples, Spitzenberg	1.10@1.35
Cantaloupes, standard	40@1.40
Nutmegs, large, crate	35@1.00
Figs, double box	1.15@1.50
Grapes, Thomp. S., crate	1.50@1.75
Grapes, Black	50@60
Grapes, Muscat, lug	80@1.25
Grapes, Tokay	50@65
Pears, Bartlett, box	75@1.75
Quinces, box	50@75
Blackberries, chest	5.00@6.00
Loganberries, chest	4.00@6.00
Raspberries, chest	5.00@7.00
Strawberries	2.25@5.00
Pineapples, Hawaiian	2.00@3.50
Bananas	1.00@1.50
Watermelons, doz	1.25@2.00

Dried Fruits.

FRUITS—1911 crop, f. o. b., carload lots, per lb., Apples, 8@9c; Apricots, 13@16c; Peaches, 9¼@11c; Prunes, bulk basis, 6@7½c; per lb, 4¾@10c; Figs, 4¼@5½c for White; Pears, 9½@12½c.

RAISINS—1911 crop: Seeded, per pkg—Fancy, No. 16, 6¼c; Choice, No. 16, 6c; Loose Muscatels, in 50-lb boxes—Standard, 4-crown, 5¼c; 3-crown, 4¾c; 2-crown, 4¼c; Seedless Muscatels, 5½c; Sultanas, 6@6¼c; Thompsons, 7@7½c.

Nuts.

Walnuts, No. 1 Soft Shell	14
Walnuts, No. 1 Hard Shell	13½
Almonds, N P U	16@16½
Almonds, Nonp	18@18¾
Pecans	14@17
Chestnuts, California	6@8
Peanuts	5@5½

Beans, Dried.

Limas	5.30@5.40
Pink	3.10@3.20
Black Eyes	3.80@4.00
Small White	4.10@4.15
Large White	4.05@4.15
Kidneys	5.00@5.15
Garbanzos	3.00@3.25
Bayou	3.65@3.85
Red Mexican	4.50@4.60
Horse Beans	2.75@3.00
Cranberry	4.00@4.15

Hops.

Hops, Coast, 1910	30@40
Hops, 1911	40@45
Hops, Oregon, 1911	40@45

Honey.

Water White, Comb, 1911	16
Dark Comb	12½
Extracted White, 1911	8½@9½
Extracted Dark	5@6
Beeswax, lb	24@30

Hay.

We have received in San Francisco the past week 3,450 tons of hay, which is practically the same amount as came into the market during the preceding week. About one-half of this amount consisted of alfalfa from the river.

There is little hay moving now for export account, and it is expected that this trade will continue to take the usual supply necessary to fill these current orders.

Alfalfa has continued to arrive in large quantities. The season has been most favorable, and much more has been shipped in here than if weather conditions had been different. The market is quiet, although everything that has ben coming in has been taken care of satisfactorily.

The dominant feature of the week has been the statement of the Hay Association showing the stock on hand in the country warehouses tributary to this city as being only 161,750 tons. This is a remarkable showing when compared with the stock on hand on November 1, 1910, of 280,170 tons, making 118,420 tons less than a year ago. Everyone knew that this year's crop was short, but the immense shortage shown by these figures was hardly anticipated.

Now, realizing the above shortage it is generally thought will cause a much firmer tone to pervade the hay situation. The weather is bound to be an important factor.

We quote the wholesale prices in round lots on today's market as follows:

Fancy Wheat Hay	19.00@20.00
No. 1 Wheat or Wh & Oat	16.00@17.50
No. 2 Wheat or Wh & Oat	13.00@14.00
Choice Tame	16.00@17.00
Other Tame Oat	11.00@14.00
Wild Oats	10.00@13.00
Stock Hay	5.50@6.00
Alfalfa	9.00@11.00
Straw, bale	60@70

Grain.

Wheat	1.47½@1.52½
Barley, fancy	1.90
Barley, good to choice	1.95@1.97½
Barley, poor to fair	1.85@1.92½
Corn	1.60@1.62
Oats, White	1.82½@1.87½
Rye	1.50@1.57½
Mustard, Brown	5½
Alfalfa Seed	18
Millet	2¾
Flaxseed	5@5½
Broom Corn Seed, ton	30.00

Feed Stuff.

Alfalfa Meal	15.00@17.00
Bran, ton	27.00@28.00
Feed Cornmeal, ton	38.00@39.00
Cracked Corn	38.00@39.00
Rolled Barley, ton	40.50@42.00
Rolled Oats, ton	36.00@37.00
Middlings	32.00@35.00
Oilcake Meal	42.00@43.50
Cocoanut Cake, ton	24.00@25.00
Mixed Feed, ton	25.00@27.00
Shorts	29.00@30.00

Deciduous Fruit Market

F. B. McKevitt, general manager of the California Fruit Distributors, reports:

Sacramento, November 11, 1911.

The following gives the number of cars of deciduous fruit shipped from all points in California for the week (seven days) ending Friday morning, November 10, 1911.

Pears—4½ cars. Occasional cars of the later varieties are still going forward, and as it is now reported that there are perhaps half a dozen left in the state, this shipment may be expected to continue in a small way for perhaps a week longer.

Grapes—566½ cars. The shipment of Tokays would have been almost entirely completed this week under normal conditions. Quite a heavy shower which prevailed in most sections of the state where this variety is grown on the 9th instant will probably prevent any further offerings of this variety, and the movement may be said to be closed. There are plenty of Cornichons and Emperors still on the vines. These varieties will be uninjured by the rain, and, barring further adverse conditions, shipment will probably continue through the greater part of the month.

Weather at this time is pleasant, but quite cool. Light frosts have formed several mornings. A hard one in the producing sections would put an end to shipments for the season.

Comparative statement of shipments November 4:

	1910.	1911.
Cherries	250½	216¼
Apricots	289¾	214½
Peaches	2,517¾	2,027
Plums	1,552½	1,366
Pears	2,561	2,308¼
Grapes	4,662½	5,739
Sundry	16	16½
Total	11,650	11,887¼

Citrus Fruit Market

LOS ANGELES, Nov. 15, 1911.

New Navels are being received well, but the quantity is very limited because of holding back all green stuff and only shipping the ripe. The prices are satisfactory, running $2.25 to $2.50 f. o. b. California. The few Valencias in hand will soon be cleaned up. Southern California is shipping no Navels, all the early stock being supplied from Tulare and Butte Counties.

Lemons are still declining somewhat, but prices received are about $4.00 to $4.50, with some exceptionally fine stock commanding $5.00. The extreme cold weather has tended to increase the consumption somewhat, and the decline is not so general as anticipated at this period of the year.

Shipments.

Shipments of oranges since Nov. 1, 66 cars; lemons, 170; total, 236. To same date last season: Oranges, 50 cars; lemons, 156; total, 206.

* * *

NEW YORK, Nov. 14.—Three cars Valencias, two cars lemons sold. Market higher on oranges, strong on lemons. Partly cloudy.

Valencias.	Avge.
Old Mission, fy, Chapman	$7.35
Old Mission, ch, Chapman	5.95
Golden Eagle, sd, Chapman	4.70
Lady Rowena, Chapman	3.55
Scepter, S. S. Ex	5.75
Rooster, S. S. Ex	5.00
Rooster, S. S. Ex	5.00
Searchlight, S. S. Ex	3.40
Lemons.	**Avge.**
Pet, S. A. Ex	$5.05
Quail	4.10
Coyote	3.80

* * *

PHILADELPHIA, Nov. 14.—(Delayed wire of Monday, because of wire trouble)—One car Valencias, two cars lemons sold. Also ten cars Floridas. Oranges, $1.50 to $2.75; average, $1.90. Grapefruit, $2.50 to $5.25; average, $4.00.

Valencias.	Avge.
Tustin Gem, Tustin P. Co	$3.00
Old Oak, Tustin P. Co	3.10
Lemons.	**Avge.**
Mission, Johnson F. Co., S. Barb	$2.90
Euclid, Growers F. Co	4.30
Festival, Johnson F. Co	2.75
Flower, Growers F. Co	3.90

* * *

BOSTON, Nov. 14.—One car sold. Clear, cold. Market unchanged.

Lemons.	Avge.
Laurel, Q. C., Corona	$4.60
Princess, Q. C., Corona	4.25

* * *

NEW YORK, Nov. 13.—Six cars Valencias, three cars lemons sold. Market higher on large size Valencias; firm on small sizes. Market easier on lemons. Weather fair.

Valencias.	Avge.
Old Mission, fy, Chapman	$7.00
Old Mission, ch. Chapman	5.55
Golden Eagle, sd. Chapman	4.70
Lady Rowena, Chapman	3.90
Old Mission, fy, Chapman	7.00
Old Mission, ch, Chapman	5.60
Golden Eagle, sd, Chapman	4.65
Lady Rowena, Chapman	3.70
Windermere, Windermere Ranch	3.90
Economy, Windermere Ranch	3.20
Scepter, S. S. Ex	5.55
Rooster, S. S. Ex	4.65
Red C, Covina Ex	4.70
Cougar, Covina Ex	3.55
Pointer, A. C. G. Ex	3.55
Martha Washington, S. S. Ex	3.75
Cowboy, S. S. Ex	4.25
Valencias—Halves.	
Martha Washington	$1.65
Martha Washington	1.50
Lemons.	
Independent, fancy	$5.00
Choice	4.50
Joy	2.75
Selected	4.70
Loma	4.25
Quail	4.05
Coyote	3.65
Blue Jay	2.95

* * *

BOSTON, Nov. 13.—Two cars sold. Clear and cold. Market is doing better on oranges—easier lemons.

Valencias.	Avge.
Robusta, A. H., Pachappa	$4.80
Hobo, A. H., Pachappa	3.65
Kenilworth, A. H. Pachappa	5.25
Peasant, A. H., Pachappa	4.10
Lemons.	
Squirrel, A. H., Arlington	$4.40

* * *

CLEVELAND, Nov. 13.—One car Valencias, one car lemons sold. Market is advancing on oranges; declining on lemons. Colder.

Valencias.	Avge.
George Washington, S. S. Tustin	$4.75
Martha Washington, S. S. Ex	4.30
Lemons.	
Pet. S. A. Ex	$4.75
Pup, S. A. Ex	4.05
Arab, S. A. Ex	4.55

* * *

CINCINNATI, Nov. 13.—Cold. Market declining on lemons. Two cars lemons, six cars Florida oranges sold. Florida Brights, $2.70 to $2.35; Russets, $1.85 to $2.30.

Valencias, none sold.

Lemons.	Avge.
Pet. S. A. Ex	$4.75
Arab	4.40
Greyhound	4.05
Pup	3.67
Symbol, Stewart Ft. Co.	3.80
Sumclass	1.75

* * *

ST. LOUIS, Nov. 13.—Market weak account weather. One car sold.

Lemons.	Avge.
Palm Tree, A. H., Arlington	$4.35
Crestmore, A. H., Arlington	3.95
Commercial, A. H., Arlington	4.50
Palm Tree, lemonettes, halves	1.55

* * *

PITTSBURG, Nov. 13.—Four cars sold. Prices on oranges low on account of quality and condition of the stock. Market also lower on lemons. Cold.

Valencias.	Avge.
Searchlight, S. S., McPherson	$3.35
Naralimo, Sparr Ft. Co.	3.00
Plain Ends, Sparr Ft. Co.	2.95
S. S. Brand, S. S., McPherson	3.00
Circus, Sparr Ft. Co.	2.80
Lemons.	
Colonial, S. A. Ex	$2.90
Hawk, S. A. Ex	2.55
Rough Diamonds, V. C. Limco	2.45
White Cross, V. C. Limco	2.85
Parrot, S. A. Ex	4.20
Goddess, S. A. Ex	2.25
Bridal Veil, V. C. Limco	2.45

RIPENING THE DATE.

(Continued from Page 481.)

enormously here upon them; the untimely storms which cause the fruit to rot and sour; and the peculiarlities of American taste which must be known and satisfied in marketing the product. The active enemies of the palm have been brought under control for the most part; but the excessive waste of fruit due to insects, birds and untimely wet weather has remained a most serious drawback, as high as ninety per cent of the crop having been lost during unfavorable seasons. It is therefore fortunate, at this time, that we are ready to submit methods whereby this loss may be almost wholly saved."

"The methods of artificial date ripening developed here fall into two classes—those depending upon stimulation by chemicals at ordinary temperatures; and the incubation process, with variations, employing only heat and moisture. The chemical methods, in particular, and the scientific foundations of the subject in general have been worked out by Dr. Vinson. One of the most promising of the many substances employed by him in ripening experiments is nitrous ether, by the use of which Deglet Noor dates may be ripened inexpensively, and without extensive inversion of cane sugar."

"The incubation method first employed by Dr. Vinson, but laid aside by him for chemical processes, was, later, independently developed, amplified, and economically tested by Mr. Freeman, who studied the scientific rationale of the process and who ripened and marketed the first successful crop of Deglet Noor dates from the Tempe Cooperative Orchard by its means."

A GREAT SHOW COMING.

The poultry fanciers of Los Angeles are planning for "The Best Ever" at Fiesta Park, January 4-10, 1912. The committee has secured 25,000 feet floor space, and the cooping facilities are known to be of the very best. As a special drawing card, seven specialty judges will place the awards. They are: William F. Brace, Victor, New York; William Purdy, Ferry, Washington; Ben F. Woodhull, Stockton; H. W. Gunston, Havilah; George W. Masterson, Duarte; E. E. Emerson, Los Angeles; R. V. Moore, Oakland. Of course there will be the usual cash premiums, silver cups, regular and special club ribbons on poultry and pigeons, water fowl, turkeys, etc. The secretary is Joseph E. Davis, R. D. 11, Box 48, Los Angeles.

We have word from Mr. Davis, Secretary of the Fanciers Club of San Diego, that preparations are already under way for the next annual, which will be held January 12-18. In connection with this may be held the exhibition of the San Diego Pigeon and Pet Stock Club, which was to have been held November 28-December 2, which dates have been cancelled.

The San Diego boys have the reputation for pulling off a fine little show, and some magnificent birds will be on exhibition at that time.

"Where IS that lantern?" "Who on earth has got that lantern?"

How many times have you heard exclamations of this sort, while some one was groping angrily around in the dark—possibly you were that some one yourself. Have you ever thought how much time and energy and temper is lost through just such vexatious little delays as can be caused by a missing lantern?

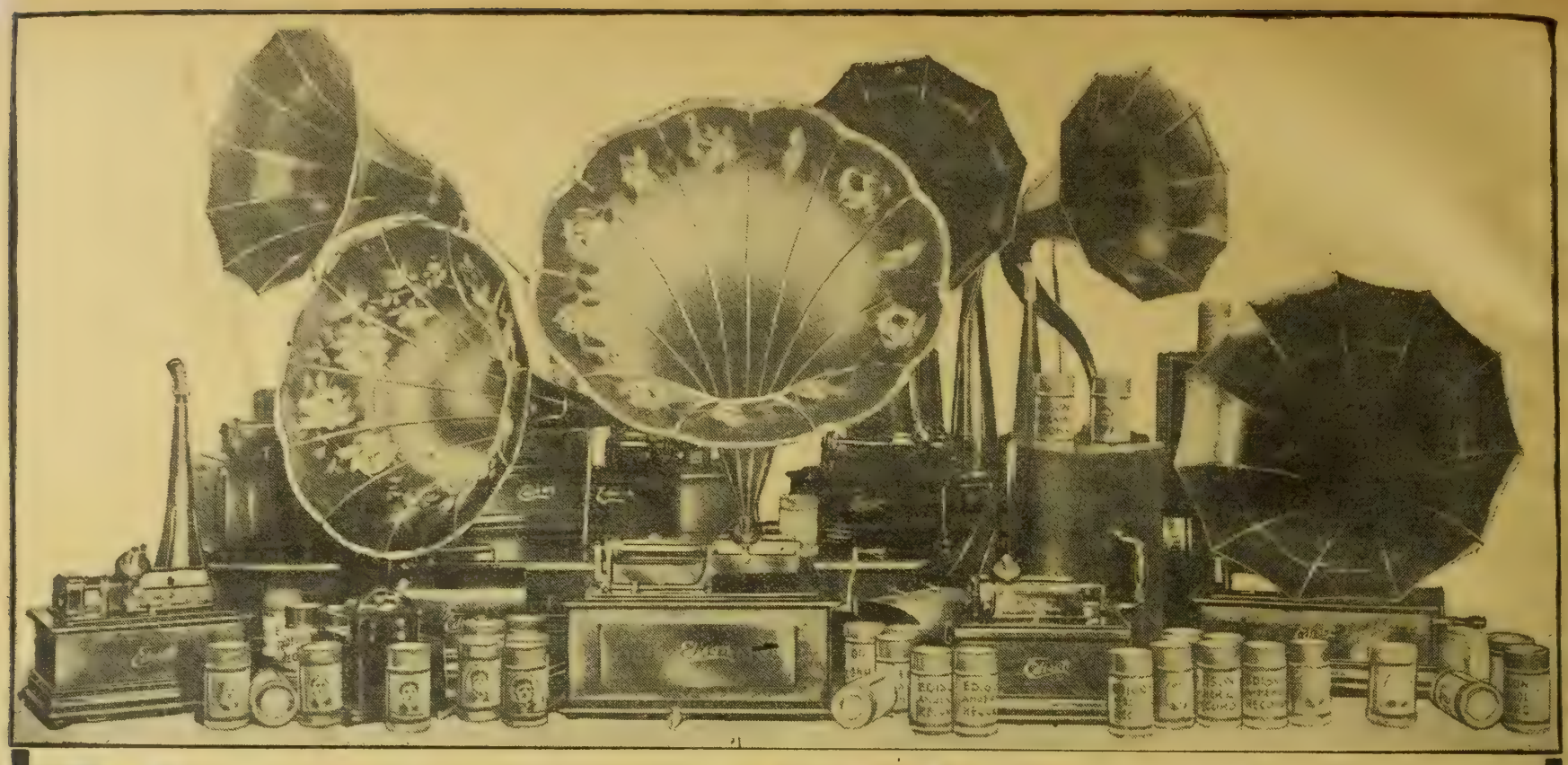
A lantern is one of those apparently insignificant and unimportant things you never think of at all—until the minute comes when you need it. It is wonderful how its importance grows then. A man is seldom more helpless than in the dark. Without light he is pretty nearly useless to himself and to everyone else.

Here is one economy that every householder or farmer should put into effect right away, supposing it does not already prevail. There should always be enough lanterns to go around—enough lanterns to meet all the different requirements of the place—a lantern for every purpose—one for every man on the place, if need be.

Think of the convenience of having a lantern always ready to your hand wherever you are likely to need it—for the front gate or the yard, in the kitchen or the barn, in the cellar or the stable. It is a mistake to suppose it really involves extra expense. The lanterns do not come in for half so much knocking and rough wear when each has its proper place and use. They last far longer. You are not always finding it necessary to buy a new lantern.

Among the very best lanterns made are the famous Rayo lanterns. These are manufactured especially for the Standard Oil Company. The best experts obtainable have been working for it for years elaborating and perfecting oil-consuming devices.

Rayo lanterns are specially suitable for farm use. They are made in numerous styles, sizes and finishes, to suit every use to which a lantern is put. Full particulars, with illustrated circulars, etc., are sent post-paid on application to any agency of the Standard Oil Company.



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Get any of the outfits shown above—your choice of records, too. **Simply get the phonograph and the records and use them free just as though they were your own.** Entertain yourself, your family and your friends, too, if you wish, with everything, from the catchiest, newest popular songs, side-splitting minstrels and vaudeville monologues to the famous grand operas, **Amberola** and other records sung by the world's greatest artists. Hear all this to perfection on the Edison Phonograph. After you have had all this entertainment absolutely free, then you may simply send the outfit right back **at our expense.** Now if one of your friends wishes to get such an outfit tell him that he can get the rock-bottom price, on easy payments, too; even as low as **$2.00 a month without interest.** But that's not what we ask of you. We just want to send you your choice of the latest style Edison Phonograph **free**—your choice of records, too, **all free**—then we'll convince you of the magnificent superiority of the new style Edison. It will cost us a little in express charges to get the phonograph back from you—that is true—but we'll feel amply repaid for that, knowing that we have made you a friend and a walking advertisement of the new style Edison Phonograph.

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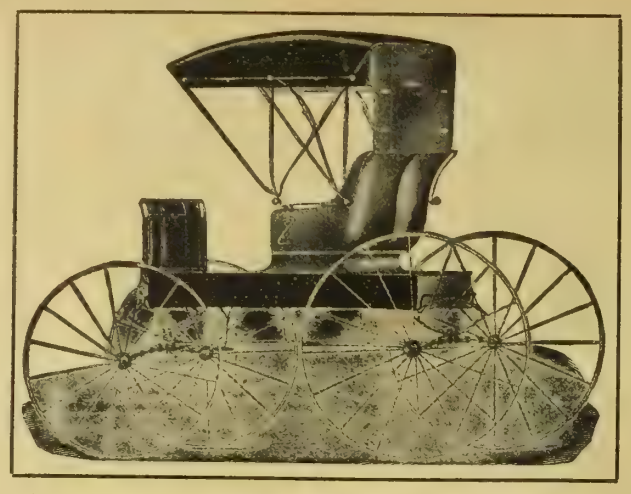
LOS ANGELES NOVEMBER 23, 1911 SAN FRANCISCO



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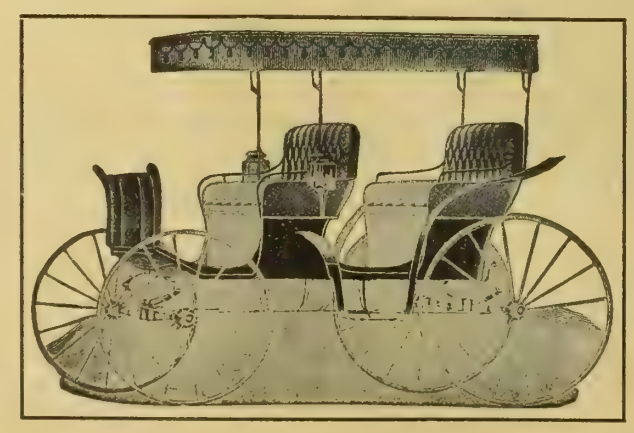

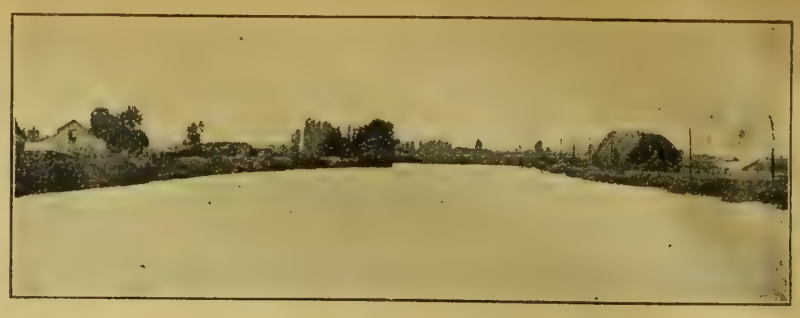

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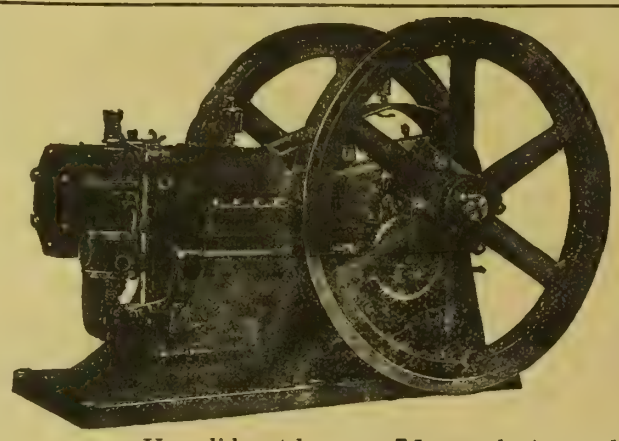

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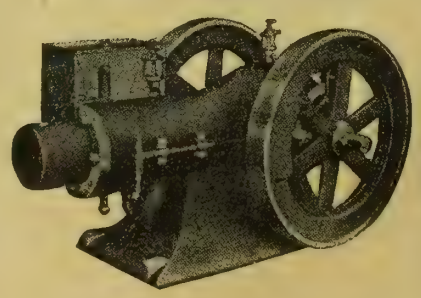

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California Cultivator

Vol. XXXVII. No. 21. LOS ANGELES: THURSDAY, NOVEMBER 23, 1911 One Dollar the Year

What Australia is Doing for Its Settlers

From a Letter by Elwood Mead of the British Columbia River and Water Supply Commission. The Letter Was Written to Edward Berwick and by Him Supplied to Cultivator Readers

The following letter, received by Edward Berwick, of Pacific Grove, from Elwood Mead, of the British Columbia River and Water Supply Commission, is very interesting, as it contains a great deal of valuable information:

"Through the courtesy of the Lands and Agricultural Departments I am sending you considerable information in reply to your inquiry as to how Victoria helps farmers to get land and make the best use of it.

"With the disappearance of public land in America something will have to be done to make private lands available for men of small means. If America is to continue to be the land of opportunity it must provide before long for the state resumption of private land, and it is along these lines that more can be learned here than from the lands resumption acts of Great Britain, although the greater part of Australia is as yet public land. You will learn, however, from the reports and pamphlets of the Closer Settlement Board that a large settlement on resumed land is taking place in the vicinity of cities and towns. This land, formerly used for pastoral purposes and grain growing, is being cut up into smaller holdings and used to grow higher priced crops. Nearly all the men who are taking advantage of this have very little capital. As a rule about enough to buy their furniture, their teams and tools, and they could not hope to obtain a home of their own were it not for the aid the state extends. But when the state gives 31½ years to pay for the land, and is considering giving 45 years, and only charges 4 per cent interest on deferred payments, any man who hungers for a farm can secure it, especially when the state builds a house on the land, and in some cases fences it and plants part of the crops, and many men whose only capital is industry and thrift are getting homes in this way. In our irrigated closer settlement areas we placed 600 families last season, many of them coming 12,000 miles. To help these men secure early returns the state plowed and planted about 3,000 acres, has an expert cattle buyer attending sales in three states to get milk cows cheap, and is now arranging to give these settlers the use of blooded stock for breeding purposes at nominal fees.

"The state has built a sugar factory, which was operated this year with satisfactory results by a Californian, Mr. Dyer; and it has bought one estate of 8,000 acres and another about half as large, and is cutting these up into 40-acre blocks to sell to sugar beet growers. The state is now considering the erection of a canning factory in one of the Closer Settlement Irrigation areas in order to provide a reliable market for the surplus products.

"No doubt to many Californians this seems a dangerous encroachment on private enterprise. Experience shows it is simply substituting a wise use of public agencies for the common good for the predatory American land enterprises which too often exploit the settlers from other states. How far this can go without destroying enterprise and initiative it is difficult to say, but so far it has not had that effect here; on the contrary, while it may prevent the establishment of a few privately owned factories, it has not interfered with the work of land boomers subdividing real estate for their individual profit; these men deal with the men who can pay cash. The state Closer Settlement agencies deal chiefly with men without capital, and are thus stimulating thrift, industry and enterprise on the part of scores of poor men who under private and speculative development would have to continue as wage earners, because private enterprise could not or would not give them the long time for payment and the financial and other assistance at the outset which they must have to succeed.

"The state has been driven into many industrial undertakings to protect the small producer from the clutch of private monopoly, which would without state interference have been more absolute and exacting than in America. And this will compel a continuous expansion of state industrial undertakings, as the state is engaged in a personal warfare with monopolistic combinations in restraint of trade. The manufacture of cane sugar is in the hands of private capital, which is a monopoly and which buys cane at a low price and sells sugar at a high price, just as it does in America. The railways are all state owned. Travel on land here is free from discrimination or favoritism, except where caused by state jealousies, but the vessels which carry products on the seas are privately owned, and nearly all are in a combine which fixes and maintains rates and favors some shippers at the expense of others. The minister of agriculture recently ascertained that practically all the refrigerated space of the fast mail steamers to Europe allotted to the transport of fresh fruits has been contracted for two years in advance by a trust. In America the Sherman act would be invoked, in four or five years you would possibly get a decree abolishing the trust, which would shed one skin and grow another, and go on with its business exactly as before, but here the shipping combine will either contract that space to the state, which had agreed to buy it on behalf of the growers, or there will be a state owned line of steamers. The existence of a butter ring a few years ago caused the state to fix for steamship lines the prices at which butter is carried to Europe, and the result is that it is carried to London, a distance of 12,000 miles, for one cent a pound. The establishment of a beef trust controlling the foreign refrigerated trade in meat led to the building of a government cold storage warehouse, which has not driven out private enterprise, but it has compelled it to behave. Only two years ago Victoria was dependent on privately owned mines for the coal which operates its state railways, then there was a strike and a combination which boosted prices, and now this state owns and operates a coal mine. Every privately owned mine still does business, but it does not raise prices.

"It is, of course, an unsettled question how far this movement can be extended with safety, but I do not know of any movement in the direction of public ownership which this state has made that has not been justified by results. I came here a believer in state regulation of privately owned railways, I am wholly converted to state ownership of railways, and I am convinced that your attempted private regulation in America is a delusion which will be abandoned in time. You will either become a nation ruled industrially by a few men of immense wealth, with the great body of the people wage earners, or transport will pass wholly under public control. It is the only way that the small independent industry can have any hope of a stable and prosperous existence.

"These are some matters outside of your industry which in its narrow interpretation is answered by the documents sent by the Lands and Agricultural Departments. But it is these measures rather than the one you are familiar with which have made the farmer of this country so universally prosperous and which give good prices and stable markets notwithstanding the distance which separates this continent from the great buying centers of the world."

Hauling Wheat to Warehouse at Delano, Kern County. —Courtesy Delano Record.

-The Largest Home Furnishing

Piano and Office Equipment House in the United States

—Our immense store—more than 215,000 square feet of floor space (just increased by the addition of another great eight-story building, half as big as our main building), together with our mammoth warehouses—in all more than 500,000 square feet of floor space—contain the largest stock of household and office furnishings carried by any establishment in the United States. Furniture, Pianos, Carpets, Oriental and Domestic Rugs, Draperies, Wall Papers, Linens, Mattresses, Bedding, Stoves, Water Heaters, China, Glassware, Silverware, and Household and Kitchen wares of all kinds.

We pack goods carefully and ship promptly to any point

—It will pay you to buy of us if you live anywhere west of the Rocky Mountains

—Write to us, if you cannot visit our store in person. Our Mail Order Department will furnish prices on anything you may need in our line, with pictures or photographs of furniture if desired.

LARGEST VARIETY **Barker Bros** LOWEST PRICES

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Citrus Trees Exclusively

Now is the best time to place your order for spring planting. Get same in while the first-class stock is available and avoid being disappointed later on.

Write Us Today

Our booklet, "CITRUS FRUITS," mailed to any address on receipt of 25c.

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EUREKA LEMONS VALENCIAS WASHINGTON NAVELS

——Clean Sturdy Trees——

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121 No. Wilson Avenue ALHAMBRA

Orange and Lemon Trees

Fifty Thousand High Grade Trees

SMITH AND CLARK COMPANY

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ORANGE AND LEMON CROPS OF CALIFORNIA AND FLORIDA.

A preliminary statement giving statistics of the orange and lemon crops in California and Florida, the two principal states of production, as reported for the Thirteenth United States Census, was issued today by Director Durand of the Bureau of the Census of the Department of Commerce and Labor. It includes a summary giving the number of trees, of both kinds, of bearing and non-bearing age, on farms on April 15, 1910, together with the number of boxes produced and the value thereof in 1909. It was prepared under the direction of Dr. LeGrand Powers, chief statistician for agriculture, Bureau of the Census. The figures are subject to such revision as may be necessary after a further examination of the original reports.

The Census Bureau calls attention to the fact that the number of trees reported in 1910 is not altogether comparable with the figures reported in 1900. In the latter year the trees reported as of bearing age undoubtedly included a considerable number not of bearing age. In the census of 1910 the difficulty was eliminated, as both the number of bearing age and those not of bearing age were called for by the schedule. Moreover, the orange and lemon growers of Florida had not in 1900 recovered from the damage by frost inflicted a few years earlier, resulting in a crop less than half as great as in 1890.

Statement showing number of oranges and lemon trees of bearing and of non-bearing age, on farms, April 15, 1910, and number of boxes of oranges and lemons produced in 1909, together with the value thereof—1910.

	California	Florida
Oranges.		
Number of trees of bearing age, Nov. 15, 1910	6,615,929	2,751,118
Number of trees of non-bearing age, Nov. 15, 1910	2,093,101	1,097,896
Number of boxes produced, 1909	14,436,424	4,852,967
Value, 1909	$12,952,291	$4,304,987
Lemons.		
Number of trees of bearing age, Nov. 15, 1910	927,130	11,740
Number of trees of non-bearing age, Nov. 15, 1910	376,859	7,329
Number of boxes produced, 1909	2,715,974	12,367
Value, 1909	$ 2,925,759	$ 13,753

California Orange Crop, 1909 and 1899.

The orange crop of California made a gain of 145.4 per cent during the decade between 1899 and 1909, increasing from 5,882,000 boxes in 1899 to 14,436,000 boxes in 1909. During the same period of time the number of trees of bearing age increased from 5,649,000 to 6,616,000, or 17.1 per cent. There were also in 1910, 2,093,000 trees of non-bearing age. In 1909 the average product per tree was 2.2 boxes. With respect to quantity of fruit San Bernardino County rose from third rank in 1899 to first in 1909. In 1899 Los Angeles County ranked first, and Riverside County, second.

The value of the oranges produced in 1909 was $12,952,000, an average of $0.90 per box.

California Lemon Crop, 1909 and 1899.

The lemon crop increased from 874,000 boxes in 1899 to 2,716,000 boxes in 1909, a gain of 1,842,000 boxes, or 210.7 per cent, although for the same period the reported number of trees of bearing age decreased from 1,493,000 to 927,000, or 38 per cent. The number of trees of non-bearing age in 1910 was 377,000. The number of boxes per tree in 1909 was 2.9; in 1899 it was just under three-fifths of one box. The value in 1909 was $2,926,000, or $1.08 per box.

Florida Orange Crop, 1909 and 1899.

The production of oranges in Florida increased from 273,000 boxes in 1899 to 4,853,000 boxes in 1909, a sixteen-fold gain. The number of trees of bearing age was 2,553,000 in 1900, and 2,751,000 in 1910, an increase of 7.8 per cent. The number of trees of non-bearing age in 1910 was 1,098,000. The value in 1909 was $4,305,000 or $1.11 per box.

Florida Lemon Crop, 1909 and 1899.

The lemon crop increased from 2359 boxes in 1899 to 12,367 boxes in 1909, a gain of 10,008 boxes, a fourfold gain. The number of trees of bearing age reported decreased from 22,691 in 1900 to 11,740 in 1910, or almost one-half. The number of trees of non-bearing age in 1910 was 7329. The value of the lemon crop in 1909 was $13,753.

GIRDLING TO INCREASE SIZE OF OLIVES.

Mr. Alxander Craig, of Fair Oaks, Sacramento County, sends the following novel method of increasing the size of his olives. A few of the fruits are sent, and they are surely monsters for Missions. They will almost pass for Sevillanos as to size. But as to the method, Mr. Craig writes:

"I grow three kinds of olives here—the Manzanillo, used mostly for pickles and worth from $80 to $100 a ton; the Nevadillo, used entirely for oil making and bringing in only $40 a ton, and the Mission, which are meant for pickles and said to make the very best pickles, but which in my orchard seldom grow large enough, and so have to be used mostly for oil.

"To remedy this defect in the Mission trees I have tried an experiment this season which promises a fair measure of success. I let the trees go unpruned, and then, after the fruit was well set, about midsummer, I girdled such of the branhces as I thought might be profitably pruned off next season. That is, I removed a strip of bark all around the branch about a quarter to half an inch wide. The result is that the olives on these branches grow very large and ought to make the finest pick[illegible]—in fact, they should be in a class all by themselves. I send you a few samples under separate cover, which fairly represent the crop on the girdled branches.

"In this way one can make sure that part of the rcop ev[illegible]estigatic will be abundantly large for pickles, and if the rest should be too small they can always be used for oil."

The American Dredging Company of New York has the contract for dredging the canal from the Laguna Dam across the Colorado above Yuma to the syphon which will carry the waters to the Arizona side.

GREAT PHOSPHATE DEPOSITS.

When the great coal deposits of Pennsylvania, West Virginia, and other states of the Appalachian region were being formed, many millions of years ago, in what the geologists term the Carboniferous age, there was also being accumulated in the Rocky Mountain region enormous mineral deposits which are of a widely different character but which may nevertheless play an economic part in the industrial development of the United States comparable even to that of coal. These are the phosphate deposits of Wyoming, Utah, Idaho and Montana, which are now known to contain hundreds of millions of tons of phosphate rock, constituting a most important artificial fertilizer. Until recently it had been generally assumed that the phosphate deposits of South Carolina, Florida and Tennessee afforded an "inexhaustible" supply, but recent estimates by the United States Geological Survey show that at the present rate of increase in phosphate mining these eastern deposits are likely to be exhausted within a generation.

Greatest Known.

The discovery of the western phosphate beds therefore constituted a most important find, and though the first reconnaissance of these deposits by the Geological Survey showed their considerable extent, the more detailed study and exploration, with additional discoveries made by the survey during the last three years, have shown that the field is probably the greatest in the world. Recent geologic study of the phosphate-bearing strata indicate the probably still greater extension of the phosphate area. The northernmost portion of the beds first discovered was in Wyoming, but an outcrop of the same character and in the same geologic formation was found last year in Montana, some 160 miles farther north, so that Survey geologists believe that workable phosphate beds may be found in many other places.

The Geological Survey has just published a bulletin embracing three reports on western phosphate fields, one covering a portion of the Idaho phosphate reserve, by R. W. Richards and G R. Mansfield, another on rock phosphate near Melrose, Mont., by Hoyt S. Gale, and a third being a reconnaissance report on the phosphate deposits in western Montana, by Eliot Blackwelder. The report by Messrs. Richards and Mansfield includes a detailed description of the Idaho field, the investigations having been made by townships, the outcrops examined, and the tonnage of high-grade phosphate rock estimated. The result is highly gratifying. Tonnage estimates were made of the phosphate rock in nine townships, and in no township was there found to be less than approximately 60,000,000 tons of high-grade phosphate rock, containing for the most part from 50 to 82 per cent phosphoric acid. Phosphate rock containing 60 to 65 per cent phosphoric acid is generally considered high grade.

Nearly Three Hundred Million Tons.

One of the townships examined contains an estimated 293,000,000 tons of phosphate rock, the net results of the Survey's work showing an approximate tonnage of 2,500,000,000 long tons with 70 per cent phosphoric acid. Nor does this include the tonnage of the Montana phosphate withdrawals, which aggregate nearly 34,000 acres.

Mr. Gale's report is a brief description of his discovery last year of the Montana deposits near Melrose, withdrawals of which were immediately made by the president. The Survey's tests of a number of samples collected by Mr. Gale show the rock to be high grade, approximately equivalent to 75 per cent of phosphoric acid. The thickest beds are 6 or 8 feet in thickness. A 6-foot bed would contain approximately 21,000 long tons to the acre.

"One of the most important considerations in connection with the discovery of phosphate rock in western Montana," says Mr. Gale, "is its significance as to the probable extent of the western phosphate fields, for it now appears probable that similar deposits may extend over a large part of western Montana. Their nearness

(Continued on Page 541.)

CITRUS SHIPMENTS.

It is interesting to note the rapid growth of California's greatest fruit industry during the past few years. It is a wonderful proof of the growing popularity of the orange and lemon.

	Lemons. Cars.	Oranges. Cars.	Total Cars.	Total Boxes.
1891-2	.....	.....	4,016	1,349,376
1892-3	.....	.....	4,400	1,478,400
1893-4	.....	.....	5,871	1,972,500
1894-5	.....	.....	5,022	1,687,500
1895-6	.....	.....	7,575	2,545,200
1896-7	.....	.....	7,350	2,649,000
1897-8	1,166	13,987	15,153	5,091,408
1898-9	903	9,448	10,351	3,477,936
1899-00	1,447	16,362	17,809	6,436,858
1900-01	2,924	21,173	24,097	8,499,480
1901-02	2,816	17,571	20,387	6,325,560
1902-03	2,649	19,776	22,425	7,119,360
1903-04	2,782	25,117	27,899	9,876,720
1904-05	4,274	25,608	29,882	10,616,466
1905-06	3,789	22,175	25,964	9,970,176
1906-07	3,507	23,986	27,493	10,556,312
1907-08	4,959	24,538	29,497	11,326,848
1908-09	6,196	31,895	39,091	14,626,944
1909-10	4,777	25,316	30,093	11,555,712
1910-11	6,764	36,821	43,585	16,736,640

The above is Southern California.

Shipments from points north of the Tehachapi were as follows:

	Total Cars.	Total Boxes.
1902-03	1,304	500,736
1903-4	1,567	640,128
1904-05	1,734	665,856
1905-06	1,564	600,576
1906-07	2,333	895,872
1907-08	3,150	1,209,600
1908-09	2,501	960,384
1909-10	2,555	981,120
1910-11	2,814	1,080,576

Stop *Bruising* Fruit and *Losing* Money.

Every time your clippers pierce an orange's skin you open the way to decay. Usually the cut is too small to *notice*—and the bruised one is crated with the good. *You* know that *one decaying orange may spoil an entire crate*—you lose just that much money. You *won't* bruise fruit if you use

WISS ORANGE CLIPPERS

United States Government Experts and leading citrus growers everywhere endorse Wiss Orange Clippers because they *know by experience* Wiss Clippers *last longest, do best work* and *save money* by *minimizing* the liability of bruising the fruit.

The blades are specially curved and ground—the points and outer edges are smoothened and rounded to avoid bruising. Handles are shaped to prevent tiring of the hand. Wiss Orange Clippers will give years of service—and are unrestrictedly guaranteed to give satisfaction. *For sale by all dealers.*

Wiss Solid Steel *Pruning Shears* will snip a broom handle and cut the most delicate tendrils. All parts are interchangeable and any broken parts can be readily replaced. 9-inch size, $2.25.

J. WISS & SONS CO., **15-33** Littleton Avenue, Newark, N. J.

Good Citrus Trees

Expert grown, large, clean stock, up to size now, for 1912 spring delivery. None better anywhere. Our buds are selected with greatest care from best individual fruiting trees and positively guaranteed true to name.

250,000 Seed Bed Stock

Sour, Sweet or Pomelo—the ***McMillan grown*** kind—large clean plants from selected seed—the kind it pays to plant. Inspection and correspondence invited. Closest nursery to Los Angeles. Alhambra car.

McMillan Citrus Nurseries

Growers of Citrus Trees exclusively
Ten years in business and here to stay

Main 732—Home 3222 ***300 So. Marengo Ave., Alhambra, Cal.***

High Grade Citrus Trees

Selected Buds on Vigorous Roots

Our trees always prove true. Send for Catalog.
Place orders early and get choice stock.

POLLARD BROS.

Alhambra Ex.
Main 13, or Black 183

Corner Mission Street and Los Robles Ave.

South Pasadena, California

EXCELSIOR TREE SUPPORT

Hooks are made of Flat Steel, 1¼ Inches Wide—6ft. of Wire.

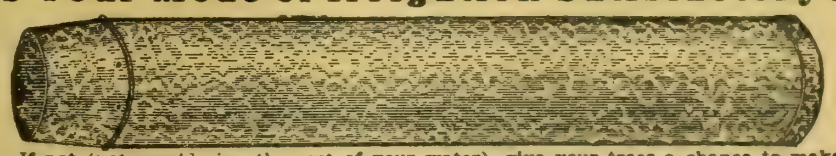
Makes Propping Unnecessary
Insures Branches Against Breaking
Lifts the Lower Limbs
Makes the Fruit Grade Higher

Guaranteed to hold 250 lbs. Hooks swing on themselves and not on the limbs. Cannot bind the limbs.

Price: $12.50 per 1000 hooks
Wire extra. F. O. B. Pomona, California.

Ranchers Mfg. Co.
POMONA, CAL.

Is Your Mode of Irrigation Satisfactory?



If not (not considering the cost of your water), give your trees a chance to make good by giving your orchard the proper amount of water all over same, and not three-quarters of your water supply within forty feet of your head flume.

The surface irrigating pipe we manufacture will remove this obstacle—will cut your water bill—is more convenient to use and will last a life time.

Write us, stating your requirements and we will cheerfully furnish you with prices and information desired.

We also manufacture Ells, Tees and Gates for this special pipe and are in a position to manufacture any special fittings you may require.

THE AMES IRVIN COMPANY **Corner Eighth and Irwin Streets, San Francisco, California**

KIRKMAN NURSERIES

TREES THAT GROW AND BEAR TRUE TO NAME

Wholesale Growers of First-Class Nursery Stock

A fine lot of Peach, Plum, Pear, Apple, Apricot, Fig, and other deciduous fruit and shade trees.

Also a million rooted grape vines; a few thousand nice Orange and Lemon trees, and a lot of No. 1 Eucalyptus.

Shipments made from Main Nursery at Fresno, or from branch at Sacramento (Corner 15th and K Sts.)

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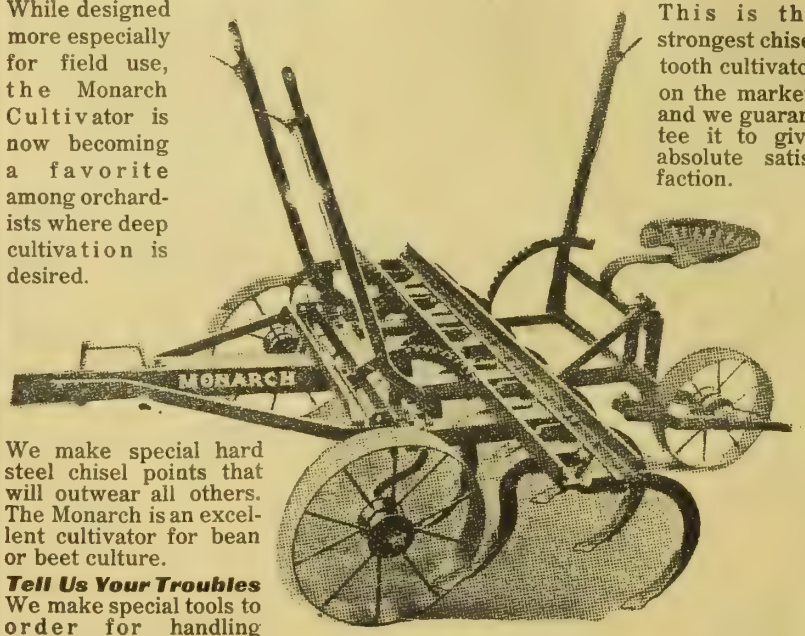
Wm. T. Kirkman Jr.

MANAGER

860-890 J Street **FRESNO, CAL.**

Monarch Cultivator

While designed more especially for field use, the Monarch Cultivator is now becoming a favorite among orchardists where deep cultivation is desired.



This is the strongest chisel tooth cultivator on the market, and we guarantee it to give absolute satisfaction.

We make special hard steel chisel points that will outwear all others. The Monarch is an excellent cultivator for bean or beet culture.

Tell Us Your Troubles

We make special tools to order for handling special work.

Write or call on us direct if your dealer cannot supply you

Killefer Mfg. Co.

2210 Santa Fe Avenue, Los Angeles, California

YOU

Want To Save

MONEY

Then buy your groceries, hardware and other supplies at wholesale from this big manufacturing and jobbing concern.

Don't confuse us with ordinary mail order houses which carry little or no stock and are generally unreliable.

We will be glad to have you call on us if you come to Los Angeles and see the immense stocks that we carry of everything to eat, wear or use.

It is because we buy and manufacture in such large quantities that we can sell at such low prices —saving you all middlemen's profits.

See our other ads in this issue of The Cultivator—then write for our Catalogue No. 41.

McStay Supply Co.

—INCORPORATED—

Wholesale Grocers and Manufacturers

—OF—

General Merchandise

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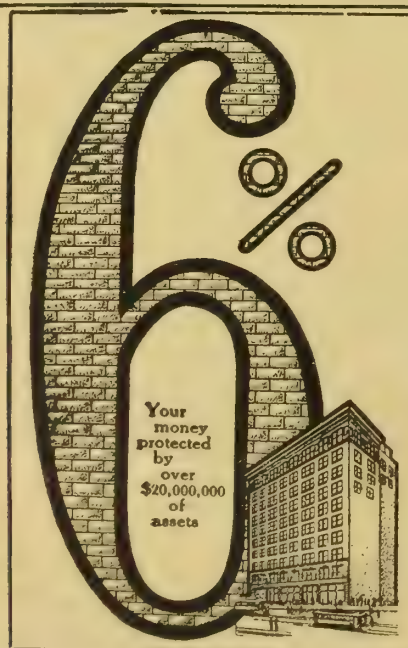

Our securities are backed by assets of over $20,000,000, consisting largely of real estate in the city of Oakland.

The Realty Syndicate has been established for 16 years and during this long period has enjoyed the confidence of the people of California.

In buying "Syndicate Sixes" you buy direct from the Company—you deal with the officers of the Company.

We have several booklets telling about "Syndicate Sixes" and our great real estate holdings which we will gladly send you. Write for one today.

Realty Syndicate
1238 Broadway Oakland, Cal.

Make Your Money Earn 6%

Deciduous Fruit Culture

THINNING APPLES.

We must spray thoroughly to prevent damage from insects and fungous diseases, and make the applications at the proper times, using the right kind of medicine for the right insect or disease, using to prevent injury, not to cure a disease or wound, although it may be a curative to a slight extent. But, remember that the bird with a broken wing never soared so high again, nor will the apple with a sting or fungus ever be so shapely or attractive again.

The chances are that there will be plenty on the tree anyway without it and if it does not fall of its own accord, or be crowded off by the fittest, it would be better to trim it off to give the other good ones an opportunity to appropriate the nutriment the deformed or cull would get, and it would make good by picking time and the crop would be handled in much less time, time saved in picking, in sorting and grading; in fact, time saved wherever any of it is handled between the picking and the consumption of it. The quality is better also, the fruit firmer in many cases, and keeps better, and the trees remain in a more healthy condition and are apt to bear more regularly and last longer, and the cost of thinning need not be great.

Thinning can be done for only a few cents per barrel, usually about five cents, but with very full trees it may need ten cents' worth of labor. Still at that the culls will be out of the race and the net returns far greater. Let us do more thinning, like some of the western growers have done, or go them one better and grow as good apples as they do on cheaper land near the best markets.

We thin the lower limbs first, taking off the imperfect ones, and then the small ones, and leave only one of a bunch. If the bunches are too close, six inches to a foot apart, depending on the variety, sometimes all of a bunch should be taken off. One should be careful not to break off the twigs when breaking off the stems of the apples, as in so doing he may destroy the fruit buds for the next crop. Both hands must be used to prevent taking off the fruits or twigs that should remain.

It is well to commence thinning about six weeks to two months after the bloom drops, and if they develop well it may be best to go over some or all of the trees twice to remove any that have been injured by codling moth, curculio, apple scab or otherwise, and also there are apt to be some that were overlooked the first thinning, or were not thinned as severely as should have been done.

We are too tender hearted or weak kneed in our thinning and have not the courage to take off enough for best results. It often looks like we have taken off plenty when thinning, it being sure to look that way early in the season, and when they grow a few weeks they are so full it looks like they had been thinned very little. Take warning and remove plenty, and still there will be enough left to spare a few for the insects and scab which may show later and be removed at a later thinning.

After the thinning, which should be done before the second brood of the codling moths appear, the trees should be given their spraying with arsenate of lead to prevent that late brood doing injury, and it is well also to use a fungicide to keep off the late apple scab or sooty fungus (clouded appearance), or bitter rot farther south, and also to protect the foliage and keep it healthy. Without healthy foliage the fruit can not develop properly and will not color as it should, taking on that rich beautiful finish which is so attractive.—American Cultivator.

HYDRATED LIME.

"Can you tell me anything about this hydrated lime?" "I can tell you it is correctly named," Percy replied.

"Hydrated" means watered, and as an investment is properly classed with other watered investments. If you prefer to use hydrated lime I would suggest that you buy fresh burned lump lime and do the hydrating yourself, which only requires that you add eighteen pounds of water to each fifty-six pounds of quicklime. In other words, that you slack the lime by adding water to it. Both quicklime and hydrated lime are known as caustic

RUSH THOSE

Bolton Orchard Heaters

The Frost Is Coming

MR. GROWER—***Our factory in San Francisco is making 5000 heaters per day and we can make delivery within 24 hours after receiving order. Don't order heaters made back East, it will take 4 weeks for delivery.***

If you need Bolton Orchards Heaters in a hurry, **Telegraph** (at our expense) ***your order to 107 South Broadway, Los Angeles. California.***

Every Grower in the United States who has used Bolton Orchard Heaters has saved his crop. We don't advertise a **competition** ***heater because we have no competition. Bolton Orchard Heaters are fuel savers also crop savers.***

Bank of Italy Building San Francisco, Cal. **The Frost Prevention Co.** ***107 So. Broadway Los Angeles, Cal.***

lime. Webster says that the word caustic means capable of destroying the texture of anything or eating away its substance.

"This definition is correct for caustic lime as you can easily determine by keeping your hand in a bucket of slaked lime a few minutes. In an experiment conducted by the Pennsylvania Experiment Station, during a period of sixteen years, eight tons of hydrated lime destroyed organic matter equivalent to thirty-seven tons of farm manure, as compared with equivalent applications of ground limestone; and, as an average of the sixteen years, every ton of caustic lime liberated seven dollars worth of organic nitrogen as compared with ground limestone. That this much liberated nitrogen was essentially wasted and lost is evidenced by the fact that larger crops were produced where ground limestone was used than where burned lime was applied."

Just a word more. We have seen hundreds of farmers applying quick or caustic lime to their land. Would they have done it if they had read of the above experiments? Does not this show that as farmers we cannot afford to be ignorant of what science teaches in this and many other particulars?—From Dr. Hopkins, "Story of the Soil."

SPARE THE DOVES.

Mr. J. A. Osgood of Sierra Madre writes regarding a clipping for the Boston Transcript that it "brought a sigh of regret to my mind, as I thought of the many doves which I have shot in the past. I trust the clipping may cause many of my brother sportsmen to think twice before again taking part in the annual slaughter of this bird so useful to the farmer." The paper says:

"The turtle doves are great feeders on the seeds of weeds, and do much to protect growing crops from harm through the ravages of those weeds on the seeds of which they feed. The Government Biological Survey, in conducting its investigation to determine the economic value of these birds, found in the stomachs of three turtle doves 23,100 hawkweed seeds, with the seeds of several other kinds of weeds which have caused the farmer inconvenience and expense during a larger portion of the crop growing season. These birds are much more effective as a weed exterminating force than an army of men with hoes and weeders, because the best that man can do is to keep the weeds in check to a certain extent, while the seed devoured by the bird is destroyed and prevented from taking root. It is estimated that the natural increase of these birds, if they were allowed to multiply without interruption, would save the American farmer at least $500,000,000 a year."

HANDLING APPLES.

Few people realize the importance of handling apples with care while picking, packing, and marketing. Apples are bruised very easily, and especially those varieties having a tender flesh or skin. Bruises mean not only an unattractive appearance, but a real waste of fruit by having to cut out the bruised tissue. Probably the greatest damage from bruises, however, results from the fact that the bruises furnish an entrance for fungus or rot spores. These spores, or "fungus seeds," are as fine as dust and float in the air. If they happen to lodge on a bruised or broken spot on the apple, they take root and grow and spread through the apple, causing it to rot. Wrapping or covering the apple may not always protect it, as the spores may have lodged on the apple before it was picked. However, if the skin and flesh of the apple can be kept intact and not bruised or broken, there is not much danger of the fungus or rot finding its way into the apple.

To prevent bruising, apples should not be dropped or thrown into a bucket, box, or barrel, and in pouring from one vessel to another care should be taken that the apples are as close as possible to the bottom of the vessel in which you are placing them before the pouring begins. If a pail is used to pick in, it should be small enough to lower into the boxes and, even then, holding back the apples with the hands is a good idea, as it breaks the fall and lessens the bruising. No apple which falls from the tree should be allowed to go into the first grade apples.

The degree of care it will pay you to exercise in handling your apples will be determined largely by the grade of fruit you are putting on the market and the care with which you guard your reputation as a fancy fruit producer.—S. Van Smith, Colorado Agricultural College.

A large orchard poorly planted and poorly tended will not produce the results of fewer trees well cultivated.

Don't summer trim young trees too liberally. Too much foliage taken from the tree weakens its feeding power.

There is no secret about the success of a man who adopts the best methods and works on them.

THE REAL WAR WITH JAPAN.

"There is not the slightest doubt," declares George T. Marsh in Sunset Magazine for August, "that Japan is prepared and anxious to wage war with not alone the United States, but all alien powers, accounting her chances of winning such an event, now, as an almost foregone conclusion. In so far we are right in our belief; we err only in the application of the word "War." To the meanest observer it should be perfectly apparent that we represent Japan's best all-around market for the disposal of her products, and that it would be the height of folly on her part to wantonly antagonize that market. Still, there is not the slightest doubt that Japan has been preparing for and expecting war against the United States of America, primarily, and, in a lesser measure, against the other great powers as well. This is no innovation, for during the years of our blindness—years in which she cleared her vision and watched our growing neglect of our commercial maritime interests—she has been preparing steadily and secretly to cope with us in this war, triumphantly; not in arms, but trade. None but the blind and deaf could possibly be exonerated for any ignorance of what all her activities of the past thirty years have converged toward, and only the dumb should be excused for failure to mention it."

First-class fruit in first-class shape will probably develop an inquiry for more of the same kind.

Farmers who would be successful apple growers must learn what a good marketable apple is, and then grow it.

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Durham, Butte County, will set about 900 acres of almonds.

Small Fruits and Vegetables

NITRATE OF SODA FOR STRAWBERRIES.

Experiments at the New Jersey and other stations showed an increased fruit yield in strawberries of from eighteen to thirty-one per cent by the use of 200 pounds per acre of nitrate of soda applied broadcast in the spring after the foliage had gotten well started, but before the bloom appeared. Plants thus treated showed a deeper color, much stronger bloom, larger leaves and greater freedom from rust than plants not receiving the soda. Where nitrate of soda is thus used care should be taken that there be plenty of available phosphoric acid and potash in the soil or the vine growth will be excessive. Experiments in Florida, where berries are shipped a thousand miles to market, indicate that nitrate of soda may injure the shipping qualities of the fruit and should not be used on the plants for at least three months before shipping begins.—Green's Fruit Grower.

THE STRAWBERRY.

It was John Burroughs who thus wrote of the strawberry: "Let me not be afraid of overpraising it, but probe and probe for words to hint its surprising virtues. We may well celebrate it with festivals and music. It has that indescribable quality of all first things—that shy, uncloying, provoking barbed sweetness. It is eager and sanguine as youth. It is born of the copious dews, the fragrant nights, the tender skies, the plentiful rains of the early season. The singing of birds is in it, and the health and frolic of lusty nature. It is the product of liquid May, touched by the June sun. It has the tartness, the briskness, unruliness of spring, and the aroma and intensity of summer."

DOES BETTER SEED PAY?

By Martin Nelson, Professor of Agronomy Arkansas Col. of Ag.

Just as it is true that blood and breeding tell in man and animals, so it is equally true that blood and breeding tell in the plant kingdom. The laws of heredity apply as strongly to the cotton plant as to any other creation.

This being true, better seed means better cotton. Better cotton means several things: It means stronger cotton plants. It means, other things being equal, earlier maturing cotton. It means more cotton per acre. It means a better grade of cotton. It means stronger, longer and better fiber. It means more returns for money and labor expended. It means more respect for the grower; and, finally, it means a better farmer.

Is the stock of seed used by the majority of cotton growers a pure strain of high quality, bred up to the point of high yield? It is not. The majority of seed used comes from the public gin. It is a mixed strain. It cannot be otherwise. It is lacking in quality, for it comes from all sorts of soils, from crops that have received poor treatment in many cases. Such seed produces weak, uneven, slow growing, late maturing plants. That farmers everywhere are beginning to realize this fact is a most hopeful indication. They are making inquiries for better varieties and for sources of seed, realizing full well that there is much to be gained.

With a soil no longer virgin, with yields much reduced, with the cost of labor slowly but surely increasing, with the great enemy, the weevil, either coming or already here, every effort must be made to counteract the drawbacks and not only make cotton pay but make it pay better. Good seed of earlier maturing, better yielding varieties of improved quality is an important means of producing more and better cotton.

Every farmer, without delay, should get at least a start of pure seed of a well chosen variety. This will cost a little more than the ordinary seed, and it may be necessary to get it at a distance where cost of transportation will also be an item of additional expense, but with ordinary good management this relatively small expenditure will have to be made only once. Grow this on land sure to bring a good crop, have the cotton ginned separately after the breast of the gin has been completely cleared of seed, and he has a supply of pure seed for a large area next year. After this he has all the pure seed he will use on the average farm and seed to sell to his neighbors, which will immediately net him more than his first outlay for the improved seed. He is in a position from this time on to do a good business selling seed in addition to his increased production of lint cotton. Every community in the cotton growing area of the state needs a grower of cotton seed for planting purposes, and needs him badly.

FARMERS INSTITUTES.

The rapid development of farmers institutes is no more aptly illustrated than by the fact that when an appropriation was made by Congress some six years ago to enable the Department of Agriculture to appoint a special officer to investigate and report upon farmers institutes and similar organizations, there were only 2,772 institutes in the entire country, with an approximate attendance of 820,000. In 1909 all of the states and territories had institute organizations, and there were 4,926 regular institutes, with an attendance of 2,196,568. There have been also independent and round-up institutes, railroad specials and other forms of institute activity attended by 710,131 persons, making the total number present at all forms of institute meetings during the year about 3,000,000.

Among the more marked developments along institute lines are the railroad specials which are now conducted in most of the states. These specials are equipped with illustrative material and provided with a corps of lecturers who address audiences of farmers at the local stations on the lines of the road. One hundred and fifty-five thousand persons were reported in attendance upon these trains during 1909, and had opportunity to hear the lecturer and examine the exhibits illustrating the practical value of the instructions given. No doubt when the figures for last year become available it will be found that there has been no let up in the popularity of this method of agricultural instruction.—Wisconsin Agriculturist.

Keep a blank book and jot down the mistakes you make this year as things to be avoided next year. It is easy to remember what you made money on, but it takes a pretty smart man to see his own failures.

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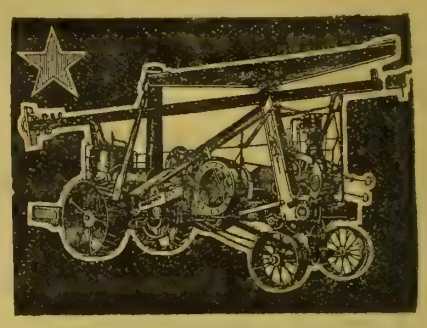

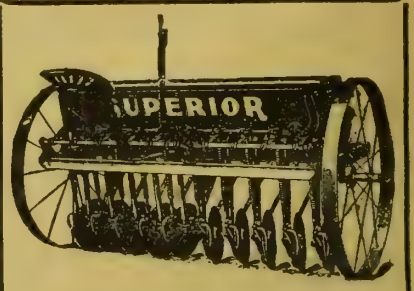

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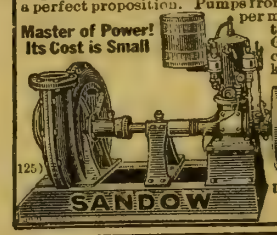

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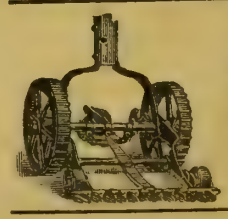

THE CLIPPER

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In one season the Clipper will drive them out.

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The Ornamental Garden

LOW GROWING SHRUBS.

Miss K. O. Session.

Cotoneaster microphylla promises to be one of the very few shrubs that remain small and low and can be trained for a low wall covering, or against the foundation for a finish. It has a very small dark green leaf, undersurface wooly, giving a decidedly greyish green appearance to the plant. The flower buds are minute and pinkish, the blossom white and small, followed by a rich red berry which lasts for some months. In some parts of England this plant covers walls of houses almost as an ivy and so trained and sheared, gives a most charming moss-like effect. It does not thrive where the climate is very rigorous.

There is great need of very slow and very low growing shrubs. A few now in cultivation here are the creeping Japanese juniper, the tripartita juniper, repheolepis orata, a low shrub with white flowers and dark blue berries, a very excellent finish for shrubbery planting or for a bed near the walk.

Eleaganus variegata is slow and good, but must be trimmed finally quite severely. Metrosideros robusta is reported to be a very beautiful scarlet flowering shrub, very dwarf in habit.

A few plants are now on trial here. Some of the heathers, the ericas, in variety, are desirable for their dainty blooms in winter and spring, but they require partial shade and leaf mold soil and no cultivation to destroy their fine hair-like roots.

There is a dwarf growing lantana that gives a mass of color and stands heavy trimming, but must be judiciously placed in the garden, as they are ever bloomers.

Crinum moorii, is at present in its glory. It has a tall stem of two or three feet, crowned with a cluster of large delicate pale pink blossoms that develop gradually. The stalk bears blossoms for a long time. The plant is large and decorative when not in bloom but becomes deciduous as the flower buds begin to develop. It grows well in the open sun but also flourishes and seems to last longer in partial shade. Its perfume is delicate and pleasing. It is easily cultivated and increases rapidly.—California Garden.

LAWN PLANTING.

We all know what a pleasing sight it is to see a dark green, velvety lawn, and we all agree that the lawn is the prettiest feature about the front garden. Yet we see so many neglect front lawns here, and a good many front gardens, where the people never made an attempt to grow a lawn at all, perhaps on account of the neighbors' "bad luck." We may admit that it takes a little more work and expense to grow a lawn here than it does in the East but at the same time, let us remember that when we have a good lawn here once, it is a continual pleasure the year around and year after in the, while in most of the eastern cau es the lawn only lasts during a to summer months. Therefore we in n well afford a little extra work so a few more dollars in acquiring a sa perfect lawn, if we make the attempt at all.

In starting the work of planting the lawn, first see that you have the correct grade. Avoid if possible a flat, impressionless grade. A lawn with a gentle slope, if ever so small, towards the walks, always looks better. Almost any kind of soil can be "doctored," so it will grow grass to perfection, as long as it is not hardpan. Where this is the case of course soil must be filled in. Forget about the old time necessity of loading up the lawn spaces with stable manure.

Where the soil is very heavy or adobe, pick up the ground and apply a coat of hydrated lime, 100 lbs. to 1200 sq. ft. Wet down and let it lay a few weeks, watering it once a day. The lime will cut through the soil and make it easy to work. A load of sand will also work wonders on soil of this kind. When through grading, see that the proposed lawnspaces are loosened up thoroughly to a depth of 6 or 8 inches. Then rake over to a smooth finish and apply the artificial or so-called commercial fertilizer at the rate of 100 lbs. to 800 sq. ft. If the soil is very light, use half and half of bonemeal and fertilizer. In heavier soil use fertilizer alone. Rake in your fertilizer and be sure it is thoroughly mixed with the soil. Now sow your seed carefully and evenly at the rate of 1 lb. to 125 sq. ft. Kentucky blue grass seed will grow the best looking lawn here. A mixture of clover and blue grass makes a hardier lawn; use 1 lb. clover to 10 lbs. grass seed. When through sowing rake in seed taking care not to displace it. Never attempt to sow on a windy day. After seed is raked in, cover with sawdust, 1 sack to 175 sq. ft. The sawdust protects the seed germs from the sun and keeps the surface from crusting after watering. Roll the lawn until it is firm and then water thoroughly with a gentle spray, taking care not to wash out the seed or displace the covering. From now on, keep the lawn wet all the time, watering as often as 4 to 5 times a day, until grass is up, which will take from 9 to 11 days. Then diminish watering to once or twice a day. Start in cutting the grass as soon as big enough for the lawnmower to nip the tender tops. It requires a sharp lawnmower to cut a new lawn. After lawn is cut once, a thorough watering three times a week is sufficient to produce a perfect looking lawn.

A lawn planted after these directions should be ready to cut in five weeks and will stay a perfect lawn for from ten to twenty years, if kept free from weeds and given commercial fertilizer twice a year, in the spring and the fall, at the rate of 100 lbs. to 1000 sq. ft.

It is needless to add that a coat of commercial fertilizer will also work wonders on an old and yellow lawn, if the proper amount of water is applied afterwards.—Eugene Johansen in California Garden.

Strips of cloth are far better for tying plants to stakes than cord, as the latter is apt to cut through the stalk.

Hosts of young men are reckless because they believe that by and by they can be what they will. Hosts of old men are hopeless because it seems impossible that they can ever be anything but what they are. Both are wrong.—Phillips Brooks.

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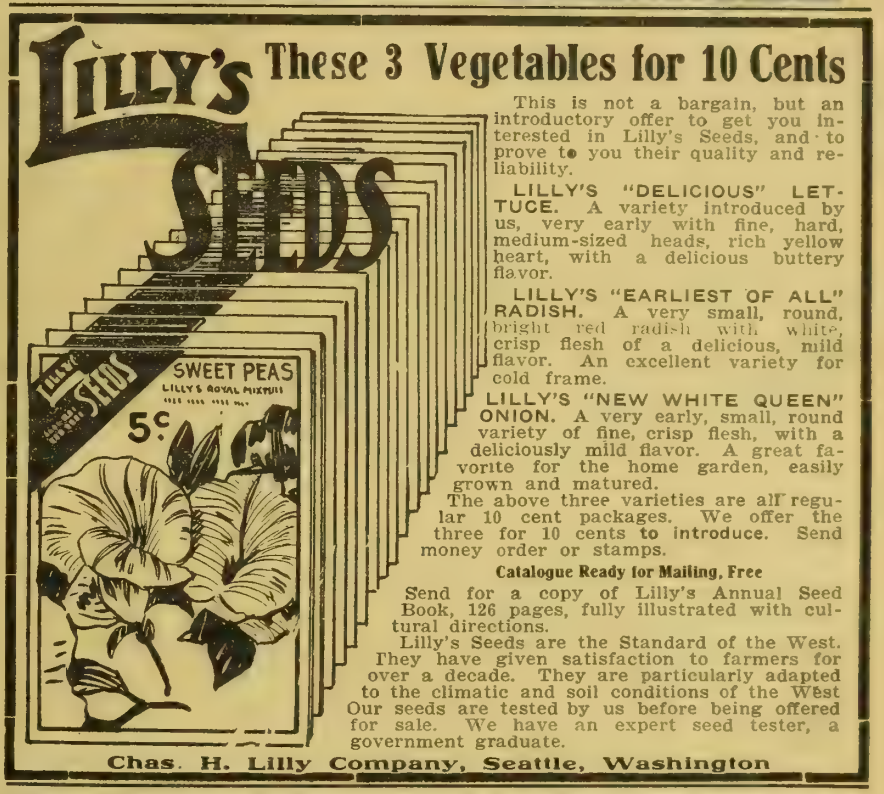

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General Agriculture

ORIGIN OF THE GRANGE.

The Order of the Patrons of Husbandry originated in the mind of O. H. Kelly, a man of New England birth, who went to Minnesota in his early manhood and became a farmer in that section of the country.

In 1864 he was appointed a clerk in the department of agriculture at Washington. Two years later, in January, 1866, Mr. Kelley was commissioned by Hon. Isaac Newton, commissioner of agriculture, to visit the Southern states, lately in hostility to the government, for the purpose of obtaining statistical and other information in regard to the condition of the South, and report the same to the department at Washington.

It was while traveling in the South in obedience to these instructions that the thought of a secret society of agriculturists, for the protection and advancement of their interests, and as an element to restore kindly feelings among the people, first occurred to Mr. Kelley.

The idea of giving women full membership in the proposed Order originated with Miss Carrie A. Hall of Boston, Mass., a niece of Mr. Kelley,to whom he had imparted his views of the new association after his return from the South. In the full formation of the Order, six other men were directly associated with Mr. Kelley, namely, William Saunders of the department of agriculture, who, next to Mr. Kelley, did most in originating the Order, and Rev. A. B. Grosh of the same department, William M. Ireland of the postoffice department, Rev. John Trimbel and J. R. Thompson of the treasury department, and F. M. McDowell, a pomologist of Wayne, N. Y., all of whom, with one exception, were born upon a farm.

These seven men were founders of the Order, and for nearly two years they labored with great energy, and with a faith and zeal amounting almost to inspiration, until, with the assistance of friends who became interested in the plan they completed a well-devised scheme of organization, based upon a ritual of four degrees for men and four for women, which is unsurpassed in the English language for originality of thought, purity of sentiment, and beauty of diction.

Having formed a constitution to govern the Order to which this ritual was adapted, these men met on the 4th day of December, 1967, and constituted themselves the National Grange of the Patrons of Husbandry, with William Saunders as master, J. R. Thompson, lecturer; William M. Ireland, treasurer, and O. H. Kelley, secretary. The remaining offices for obvious reasons were left vacant.

The little brown building in which the organization was effected was at that time the office of Mr. Saunders, and stood embowered with the trees in the gardens of the agricultural department on the corner of Four-and-a-half street and Missouri avenue. Later the late Colonel Aiken of South Carolina and other interested members of the Order made vigorous efforts to have the government preserve this historic building, but they were unsuccessful in their efforts.

The first Subordinate Grange was organized in Washington, D. C., the 8th day of January, 1868, as a school of instruction, with William M. Ireland as master.

The first dispensation for a Grange was granted at Harrisburg, Pa., the 4th day of April, 1868, but the first regular Suborbinate Grange to which a charter was issued was organized at Fredonia, N. Y., the 16th day of April, 1868.

The first State Grange, that of Minnesota, was organized the 22nd day of February, 1869. The new Order made slow progress up to 1872, and only 257 Granges having been organized in the entire country. During the year 1872, 1105 were organized, and the Order has an existence in twenty-two states.

The first meeting of the National grange, as a delegate body, was held at Georgetown, D. C., the 8th day of January, 1873, with six of the founders of the Order and seventeen delegates present, representing eleven states; six of the delegates were masters of State Granges, and the remainder were deputies in the Order. In addition to these, four women were present, viz.: Miss Carrie A. Hall, Mrs. O. H. Kelley, Mrs. D. W. Adams, and Mrs. J. C. Abbott. The total number of Granges organized previous to this meeting was 1362. Nearly 30,000 charters have been issued to the present time, and the organization is now increasing in membership and influence faster than at any previous time in its history.

ALFALFA SEED ADULTERATED.

Too much care cannot be exercised in the selection of grass, clover and alfalfa seed. The latter is especially subject to adulteration with cheaper seeds that closely resemble it, says the Alberta Homestead, and the great danger lies in the fact that with the adulterants some noxious weeds may be introduced which will cause endless trouble and work in the future. It is almost impossible for the average individual to tell the difference between alfalfa, yellow trefoil and sweet and red clover seeds. Alfalfa is frequently adulterated with these seeds by unscrupulous dealers, who, owing to the great demand for the seed, cannot resist the temptation. Good alfalfa seeds are of an obscure greenish or reddish yellow color, while the defective or immature seeds are usually brown and generally shriveled. The shape varies, but the majority of the seeds are kidney shaped.

Every farmer should know something about the history of the seed which he contemplates buying. It is an excellent idea to test the seed for vitality and purity; oftentimes seed is low in vitality and has as high as 15 to 25 per cent of weed seed. Such seed is usually offered at 10 to 15 per cent below market quotations and is likely to be more expensive than the higher priced, pure seed.

It is a simple matter to make a germination test. Count out 50 or 100 seeds of the kind to be tested and place them in a plate between two pieces of moistened flannel cloth. On a slip of paper record the variety, the number of seeds and the date. Place the slip on the edge of the plate. Cover the whole with another plate, which is inverted. Keep the plate at room temperature for several days. Examine the seeds daily, and if the cloths become dry, sprinkle a little water on them. At the end of a few days count the seeds that have sprouted and from that determine the percentage of good seed.

Special Bargains

Include some of these items in your regular order. **THEY ARE MONEY SAVERS.**

WILBUR'S STOCK FOOD—This brand is standard everywhere. 25 cent size. 2 for 38c

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MAPLE FLAKE CORN FLAKES—This regular 10 cent seller, none better, we offer you at, special:
Doz. 80c
½ doz. 42½c

MAPLE FLAKE WHEAT FLAKES—Regular 15 cent seller. Known and sold every where—
Doz. $1.10
½ doz. 60c

FAULTLESS TOILET PAPER—Regular 10 cent rolls of this fine medicated tissue. 3 for 12c

BANNER FLAT TOILET PAPER—Regular 10 cent size, medicated tissue. 3 for 12c

INVINCIBLE WASH BOARDS—Small family size, globe crimp, coated steel, ventilated back. 1 for.....20c

SEA WAVE WASH BOARD—Regular family size, broad head, cable and angle crimp, heavy coated steel. 1 for 27c

GARLIC—New crop, just received; strictly fancy; 100-lb. sacks, $7.50. Per lb. 09c

MINCE MEAT—A. B. C. Brand of condensed mincemeat, made of choicest meats, fruits and spices. None better. 30 lb. pail.....$2.70

GOLDEN GLORY SYRUP—This most delicious of corn syrup, put up in 2½-lb. quart cans. 3 for.....26c

RED HEN MOLASSES—Genuine New Orleans, for table use or cooking purposes. 3 pint cans.....25c

POPPY DRIPS—Well known brand, pint cans. 3 for 24c

PLAIN PICKLES—Medium size sour pickle, latest crop, newly packed in com'l 5 gal. pails. 1 pail.....$1.15

SAUER KRAUT—New pack, long thread kraut—it's delicious. 1 gal. pail, 65c. ½ gal. jar.....26c

PARAFFINE WAX CANDLES—36 sets of 6 candles each to the box. Per box $3.50. Set of 6.....11c

SWEET CHOCOLATE—California Star, 1 lb. cakes. 1 lb. 20c

GHIRARDELLI'S COCOA—This famous brand of cocoa, can you beat the price? 5 lb. tin.....$1.85

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50 Market Street, Agnew, Santa Clara County, Cal.

THE ORIGIN OF ROCKS.

The geologist divides rocks into three general classes—igneous rocks, originating from the molten magma forced upward from the bowels of the earth, such as granite and the various lavas; sedimentary rocks, consisting of disintegrated particles of the igneous rocks which have been reformed into rocks themselves, such as sandstone; and metamorphic rocks, consisting of igneous or sedimentary rocks whose composition has been greatly changed by intense heat, chemical action, or other causes, as, for instance, a limestone that has been changed to marble.

Sedimentary rocks, as stated in the geologic atlas of the United States Geological Survey, are usually made up of layers or beds which can be easily separated. These layers are called strata, and rocks deposited in such layers are called stratified. The surface of the earth is not immovable; over wide regions it very slowly rises or sinks with reference to the sea, and shore lines are thereby changed. As a result of upward movement marine sedimentary rocks may become part of the land, and most of our land areas are in fact occupied by rocks originally deposited as sediments in the sea.

Sandstone is perhaps the simplest example of a sedimentary rock. Obviously sandstone was once sand, and again each grain of rock was once a part of some older rock. This sand was first eroded and then deposited and either subjected to great pressure by overlying masses perhaps thousands of feet thick or cemented together by chemical solutions. Where the stone was formed by simple pressure it contains a large proportion of open spaces and thus becomes an ideal water bearer. Some sandstones will carry as much as six quarts of water to the cubic foot of stone. In other varieties the interstices may have been filled with cementing material, so that the rock may be for all practical purposes almost as dense as granite.

EXPORTS OF MANUFACTURES.

The value of manufactures passing out of the United States in the calendar year 1911 may exceed one billion dollars. This estimate is based upon figures of the Bureau of Statistics, Department of Commerce and Labor, covering the exports of manufactures in the nine months ending with September, 1911, which amount to 478½ million dollars for finished manufactures and 240½ million for manufacturing, making the total exports of manufactures in the period named 719 million dollars, against 612 million in the like period of 1910. The increase in the nine months of 1911 over the like period of 1910 is 17.48 per cent, and in case the increase during the remainder of the year continues at the same rate the total value of manufactures passing to foreign countries during 1911 will be about 970 million dollars. When to this is added the value of manufactures going to Alaska, Porto Rico and Hawaii, not included in the exports to foreign countries, the total outward movement of manufactures from continental United States in 1911 will pass the billion dollar line. This will bring the total value of manufactures exported in 1911 to more than twice that of ten years ago and more than five times that of twenty years ago, the exports of manufactures in 1901 having been 447½ million, and in 1891 about 185 million dollars.

One shipper of Sutter County sent out fifty-six cars of grapes this season.

NOT YET USED TO IT.

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"Work—nothing but work from mornin' till night!"

"'Ow long 'ave you been at it?"

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Everbearing, never dormant. $1200.00 per acre first year reported. Illustrated Booklet Free.
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Send for free Illustrated Folder of his
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Apple Trees

I have propagated, and grown with skill and care, several thousand apple trees of leading varieties, including Delicious, Winter Banana and King David. Ready for delivery January. Also a few hundred pear trees and several hundred Pierce grape. Write your needs and let me quote prices.

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SAN GABRIEL, CAL.

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Also a few choice Berkshires of both sexes. Write for prices and breeding; or, better come and see them.
GEO. C. DICKSON - - - - National City, Cal.

STRAWBERRY PLANTS
Ready for shipment January 1, 1912
Write for our circular giving description and prices of Klondyke and Brandywine plants.
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HATCH SUCCESSFULLY FOR EVERY OPERATOR
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John Deere Engine Gangs

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In the plowing test ten of the winners out of a possible thirteen pulled John Deere Engine Gangs.

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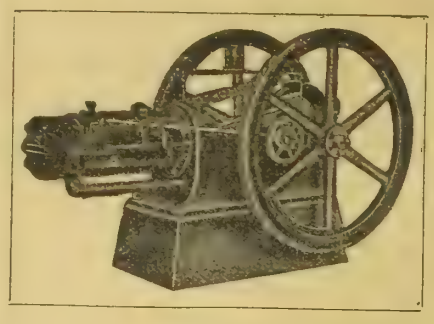

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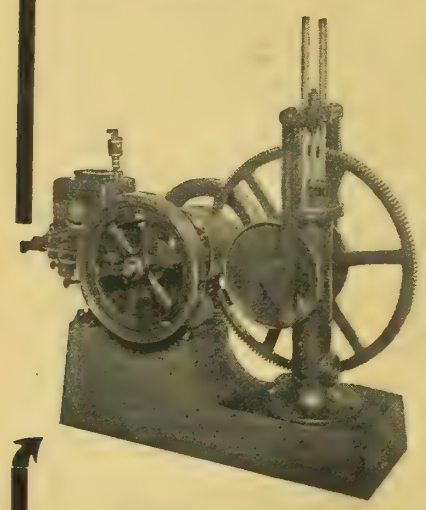

If you have not, you have not seen the latest thing in a perfect little pumping plant. Note the simplicity of this jack; direct lift each side of the piston; no wobbling or jerking, but a smooth, even stroke. Engine is fitted with pulley, so that you can run the washing machine, the churn, the cream separator, and be such a handy little helper about the place.

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SEED GRAIN BLACK AND RED OATS, WHEAT, BARLEY. BEAN AND SCREENINGS

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Established in 1855 Correspondence Invited

Bees and Their Care

MARKETING THE CALIFORNIA HONEY CROP.

By Ralph Benton.

There is a great deal current today about the organization of farmers of all classes—stock men, grain men, raisin men, walnut men, and even bee men—organization for the seemingly laudable purpose of securing "better prices" for their products. There are strong reasons for this movement, for the honest hardworking farmer who is too busy making hay while the sun shines to bother much about marketing conditions, either buying or selling, has been exploited on every hand and in many instances unjustly deprived of a large part of his rightful returns as a producer. But when he talks about organizing to secure better prices there are few people interested in his talk and, in many cases for good and sufficient reasons, he gains but little response from his neighbor of the same class; and meanwhile the exploitation goes on.

When the beekeeper or any other producer says, "Let us organize and secure better prices for our products," I repeat, he only interests himself and perhaps a few of his less dubious and more socially inclined neighbors, and that is all. But on the other hand, let this same producer say, "Let us organize and secure better prices for our products and cheaper prices for the consumer," not only does he interest himself and a few of his more hopeful neighbors, but all of his fellow producers and the whole consuming public alike. His fellow-producers, heretofore unwitting competitors, prick up their ears because of the apparent anomaly of his cry, "Better prices for ourselves and cheaper prices for the consumer." They wonder how Neighbor Jones is going to do it. "Think of it! Better prices for ourselves and cheaper prices for the fellow down in the city or the fellow back East who has to eat what we grow! Let's hear how you are going to do it, Neighbor Jones; this interests us." And the fellow down in the city who is pegging away on a limited salary with a large and increasing family to clothe and feed, with all the other expenses of car fare, gas bills, electric bills, laundry bills, ice bills, fuel bills, telephone bills, water bills, taxes, street assessments, property payments and what not, picks up the evening paper to read out of sheer nervousness on the way home from the office and there meeting his eye in big headlines, reads, "Farmers to Organize—They say they can by so doing materially reduce the cost of living for the consumer."

Oh, what a relief! "Materially reduce the cost of living!" Is it possible? Can he really believe his eyes? Say, but that is the most interesting thing he has read in a long while and he reads every inch of both morning and evening papers every day. Why this even beats reading the "pinkey" and the latest baseball news. Think of it! Reduce the cost of living! And that evening at home at the dinner table after the baby has been put to bed he looks up smiling at his wife as she seats herself by him: "What do you think I saw in the paper tonight? Why there is a bunch of farmers up the country who have gotten together and say they can reduce the cost of living for us a whole lot by dealing more directly with the consumer. I'm going to put Grocer Hopkins next to those fellows. If he could deal directly with them and get things as cheap as they say they can furnish them, he'd double his business, he could sell things so much cheaper. I am going to tell the boys in the office about it and I'll bet every one of them will deal with Hopkins if he gets next to the farmer and can deliver the goods at the price we can afford to pay."

Beekeepers! when we talk about organizing to get "better prices" we are putting the emphasis on the wrong thing. What we want to do is "to organize to reduce the price of honey for the consumer," and that will enable him to eat and buy more honey, and that will cause the grocer to lay in a larger stock of honey to meet the demands of his customers, and thus on the basis of an increased business in this line, net for him a fair income on honey; and this demand of the grocer will enable your representative in the field to place at a minimum of expense all the orders for honey you can fill, which will enable you to move your honey rapidly and at a fair figure, encouraging you to become a heavier producer and the honey business will be looking up. And this, after all is said, is about all that the honey producer wants—a fair price for his product and a rapid and permanent market for all he can produce.

A second grave mistake which the honey producers have made in all of their attempts at organization is to "organize to hold their honey for better prices" or "to secure the prices they want." No policy could be devised more suicidal than that. Several years ago we visited the warehouse of one of our associations that had been attempting to "stand together" on the price of honey, and we found the warehouse stocked with honey from two years back, the manager in a troubled state of uncertainty, and the members of the association doubting and disgruntled with the enterprise.

Whatever is done, never organize a marketing association on the basis of holding honey for a better price, for such an organization resolves itself into a "holding organization" and is a failure so far as the purpose for which it is designed is concerned. When you organize, organize "to market honey on the co-operative plan" and see to it that you move your honey into the market at whatever price you can get for it. This is the secret of success, e. g., that you have a market in view, a channel through which to move your honey rapidly and regularly, and your business management under your control and on a salaried basis. It is important that there be one central honey exchange for the state which should have full control of all representatives in the field and should also have entire control of all shipments so that there can arise no business misunderstandings in the placing of orders. It is equally important that each locality have its "local co-operative marketing" association embracing only a limited area in order to insure frequent meetings and to establish business confidence that flows from personal touch. As a con-

necting link between these local associations organized wherever a dozen or twenty producers can be gotten together, and the central state exchange, an intermediate unit, the district exchange, might profitably be introduced, one to each of the large honey producing localities, e. g., a Southern California district exchange, a San Joaquin Valley district exchange, and a Sacramento Valley district exchange. These district exchanges should be assembling points for the honey of the local associations within their territory and should be rallying centers for co-operative marketing promotion work; but should not be distributing points except under orders from the central exchange.

Let me emphasize that whatever is attempted along the line of organization, be done now, within the next few winter months before February and the busy season opens up. Let the country clubs and associations take the matter up and appoint representative committees to get the bee men together for the formation of the local co-operative marketing associations. The directors of the local association should elect their own chairman and secretary, and these two officers from each local association, together with like officers from similar associations in a given district can meet and form the district exchanges to the number of three, as indicated above. Then we are ready for the organization of the central exchange with provisions for an adequate supply of funds and empowered to employ a salaried office force and field representatives in the eastern markets to place the honey close to the doors of the consumer. Part of the legitimate work of the central exchange should be to inaugurate a systematic advertising campaign for California honey; and in order to leave them free for this and the business of marketing they should be relieved of all promotive work of organization in the district exchanges whose chief business should be to organize local associations, get the honey together and to execute the orders of the central exchange.

Bear in mind that it is not necessary to "control" all or even a major part of the honey produced. We think of the citrus exchange as a model of a successful marketing association; yet it is safe to estimate that half the orange crop is marketed outside of the exchange. All that is necessary is that a few of the co-operatively inclined producers get together and do "business" in a business-like way and your efforts are bound to bear fruit, and when you begin moving honey successfully into the market, the more backward will fall in line and swell your numbers.

CEMENT PRODUCTION.

Ten years ago the production of Portland cement for the first time passed the 10,000,000-barrel mark, showing an increase of 2600 per cent over the production of 10 years previous, and the giant strides that had been made in the industry were widely remarked. Even this production was small compared with that of the present day. In 1910, according to the report on cement by Ernest F. Burchard, of the United States Geological Survey, the production of Portland cement reached the enormous total of 76,549,951 barrels, with a value of $68,205,800. This is equivalent to 12,986,152 long tons, valued at $5.25 a ton. It is an increase over the output for 1909 of 11,558,520 barrels, or nearly 18 per cent, and an increase in value of $15,347,446, or more than 29 per cent. This increase alone is greater than the total output of Portland cement in 1900. In addition to Portland cement there was also produced last year 1,139,239 barrels of natural cement and 95,951 barrels of puzzolan cement, a total of 77,785,141 barrels.

Steady Decrease in Price.

The price of Portland cement in 1910 was as low as 73 cents a barrel in some places, the average for the United States being 89.1 cents a barrel. In 1890 the average price was over $2 a barrel and as late as 1903 it was $1.25 a barrel.

Mr. Burchard remarks that measured by the capital invested the cement industry is one of the world's three great extractive industries. In capital employed it apparently far outranks the gold-mining industry of the United States, including Alaska, as well as the copper industry. Only coal and iron stand ahead of it.

The principal constituent of Portland cement is limestone, and Mr. Burchard's report summarizes the most important limestone formations in all the states. The greatest of these are found in the eastern half of the United States, where there are enormous limestone deposits. The report is accompanied by a map showing the distribution of these limestones. The areas they cover comprise many thousands of square miles. The map also shows the location of the operating cement plants in the United States.

THE GRANGE.

History will, I am sure, recognize the Grange movement as the most fundamental as well as the pioneer in the movement to make country life equal to city life and to develop the country folks along the same standards set for others. I am sure in our day and generation nothing else has occupied the same field in this important work. And everything indicates the Grange had a special mission, namely—to encourage the farmer to a higher plane of living and to cheer and comfort him while engaged in his daily work, as well as to demand for him proper recognition and a square deal from the civil community. I am not writing this simply to present Grange arguments, but to have us feel it is a cause in which we all should take pride and hence will give it the attention and time to which it is entitled. It will pay to attend the National Grange and you will get value received while you will be proving your loyalty to the cause we all love. —C. M. Freeman, Secy. National Grange.

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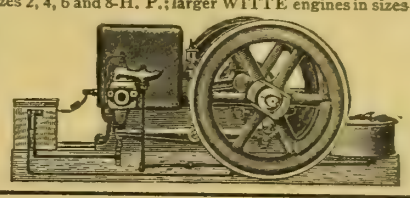

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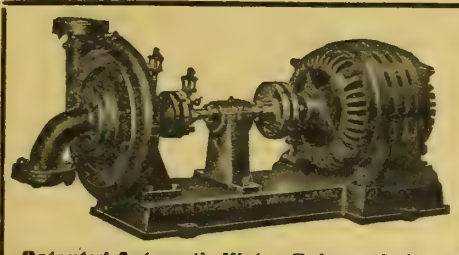

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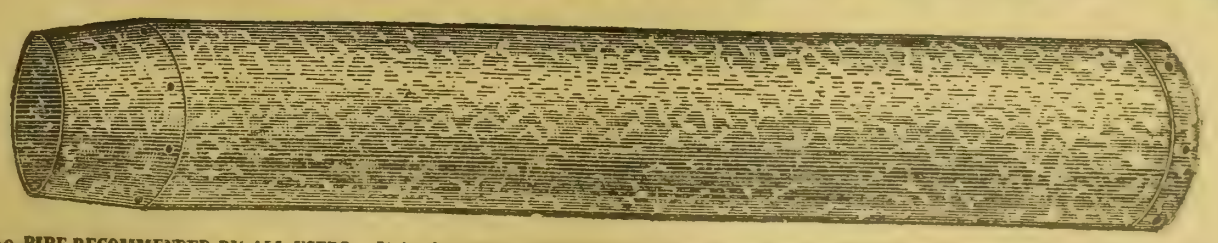

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Thursday, Nov. 23, 1911

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STATE FARMERS UNION.

The annual meeting of the State Farmers Union closed at Modesto last week with most interesting and helpful discussions at every session. Homer A. Craig of Santa Clara County was elected President and Guy H. Miller of Modesto, Vice President.

MODESTO POULTRY SHOW.

The first annual Stanislaus Poultry and Pet Stock Show came to an end last Saturday night. The Cultivator representative was on hand and sent in an account of it with a full list of the winnings, but owing to the slowness of the mails it did not reach the Cultivator until just as we were going to press. Next week it will appear, together with a list of the blue ribbon winners.

GOING UP.

Farmers who did not produce their own hay, truckmen, and in fact all hay consumers, are aghast at the price to which hay promises to mount within the next few months. Already the upward trend is pinching the buyer, and the forehanded man who considered the possibility of a shortage and laid in a big stock is congratulating himself. Unfortunately, much of the hay has passed from producers' hands, but those who have stored their new hay and waited for the present conditions are strictly in clover.

EARLY FROST.

Cotton growers of Northern Texas were severely injured by a first of the month freeze which destroyed much of the cotton in the entire cotton belt. Practically all of the "top" cotton, which crop had promised to be large, will be killed. With the Imperial Valley drawing down large premiums and gold medals at the New York Land Show for the finest short staple cotton produced in the United States, and in view of discouraging conditions over the South, it looks as if cotton culture on the West Coast should be materially advanced.

FREE SEEDS.

We doubt not the coming session of Congress will, with great wisdom, order the continuance of the free seed distribution, and that the representatives and senators will make a touching appeal to newspapers to insert free advertising of free seed distribution, and the farce will go on, with as little advantage to the producing class as in the past. Of all the needless wastes in the agricultural work taken up by the government, this is the limit. Perhaps some day congressmen who have the courage of their convictions will be elected and rise in their wrath and stop this petty graft.

STATE CONVENTION.

The Annual State Fruit Growers Convention, always held in December, is scheduled much later this year than usual. This was made necessary by the change in office of the commission. Heretofore the convention has been held about the first week in December; this year it is deferred to Dec. 19-21 at Santa Rosa, Sonoma County. Messrs. Galloway and Newcomb are pushing the arrangements at the Santa Rosa end, and promise is made for a royal welcome to all who attend. We hope that in next week's paper we will have an outline at least of the program, which Commissioner Cook assures us will be of exceptional interest.

SEED TESTING.

The Bureau of Plant Industry sends out information that, with other seed testing laboratories already established in the United States, one will soon be in working order at the California Experiment Station at Berkeley. These laboratories are established and maintained for the purpose of furnishing information as to quality of agricultural seeds. These seeds are identified, examined or tested according to request accompanying them. Four different tests are made according to request: identification of seeds of weeds or crop plants; examination for presence of dodder, etc.; mechanical purity (this last test influences the determination of percentage of weight of pure seed, foreign seed, sticks, stones, dirt and chaff. Not more than five of this latter test will be made for any one firm or individual in one calendar month); and the last a germination test.

MANY AUTOMOBILES.

Advance information from the Bureau of the Census shows that the number of establishments manufacturing automobiles in this country increased 317 per cent during the last decade. The increase of capital in this manufacture was still greater; it was 653 per cent. The gross value of products turned out showed an increase of 730 per cent. The total cost of materials increased 901 per cent. In dollars the aggregate manufactured product in 1909 was $249,202,000. The number of gasoline operated machines turned out in 1909 was 121,274; electric operated, 3,639; steam, 2,376. As to style of machine, by far the greatest number were touring cars. Of these there were 76,000; runabouts, 36,000; buggies, 4,000; closed vehicles, 3,000; public conveyances, 1,400.

WHOLESALE MARKET.

An Orange County blackeye bean producer recently called at this office to inquire where he could secure $4.50 per hundred for his beans. In his section jobbers are only offering $3.50. The wholesale market quotations in the Cultivator gave him the impression that he could secure $4.50 in the Los Angeles market. His attention is called to the two words immediately preceding the bean quotations. These are "Wholesale Quotations." If the bean growers could unite and establish a wholesale house for the disposal of beans to the retailer, and could supply the beans the year around, that quotation might be realized. From it, of course, would have to be deducted expenses of maintaining that establishment. Producers must bear in mind that market quotations in any paper are merely a guide as to general trend of the market. We know of no means by which producers can secure wholesale quotations for their products. The wholesaler cannot conduct his business, pay immense rents, clerk hire, cartage, freight, etc., and sell at producer's prices. In addition to his own expenses, there is often a percentage to the jobber who has bought in large quantities from the producer. It can readily be seen where this dollar difference between price to producer and to retailer comes in. To us it seems too large a difference. To us it also seems that by proper cooperation and placing the marketing of the farmers' products in the hands of good business agents of their own, better returns should be secured, but to get the producers together is the problem.

GOOD POULTRY STUFF.

One of the customs of newspaper offices is the denominating of copy sent in for publication as "stuff." Perhaps the general public is acquainted with the term "copy," but in ordinary office conversation "stuff" goes. We mention this because this custom has become a habit with many of us, and when a well wisher of the paper refers to his material which will be sent in, and the publisher or editorial staff refers to it as "stuff," it sometimes has given offense.

We refer now to stuff which is in hand for the pleasure and information of our poultry readers. We are planning to give more attention to the poultry department of the Cultivator, for plainly there is an increasing interest in this department of rural economy. Several practical poultry people have sent in communications, and others have agreed to do so within the next few weeks, beginning with the first issue in December. These articles will appear from time to time, probably not in every week's issue, though, with Mrs. Basley's material, there is little question but we will keep original matter before our readers every week.

Mr. Henry Langenschwadt of San Jose, Mr. Baldwin of the same place, Mr. Goodacre of Compton, Mr. Schofield of Gardena, Mrs. King of Gridley, Mr. Boyer and Mr. Bickerdike, both Easterners, and other Californians, will contribute to this department. It will be good stuff and worth the reading.

STUDYING AGRICULTURE.

On the principle that if more thorough agricultural knowledge is of value to the coming generation it must also have something worth seeking by the older heads who have to deal with today's problems, farmers in the neighborhod of Gardena are taking up the matter of getting more definite information as to scientific facts with which they have to deal. Mr. Stevenson recently commented upon the better opportunities of youngsters of today, and discussed with some of his neighbors the advisability of their demanding for themselves some of these advantages. The teachers in the Gardena High Shcool agricultural courses agreed to unite with parents of the children in this science study, and hopes are now expressed that regular meetings may be held, lectures given and studies taken up by this body of progressive agriculturists.

The first meeting is to be held this week, and Dr. Powers of the Los Angeles health office is to make an address, as will one of his inspectors of dairies. This will tend toward one beneficial result, that is, bringing dairymen and health officers together for a better understanding. Some dairymen have felt restive under requirements—and more often methods—of these inspectors. Sometimes this has been with cause; sometimes by lack of understanding on the part of the dairymen. If our health officers will be more considerate, more reasonable, we believe they will meet hearty response from the dairymen, but the political inspector who starts out with the purpose of making trouble has it in his power to do it to his satisfaction.

We hope to hear report from the meetings at Gardena that the older generation has taken hold of the study of rural science with as much zest as do the youngsters.

Agricultural News Notes of the Pacific Coast

Northern California

Chico, Butte County, is affected with a pest of flies.

Farmers near Willows are receiving several carloads of pure bred stock.

Colusa County prune growers are shipping their product to market by boat.

Biggs, Butte County, has been harvesting some strawberries 4½ inches in circumference.

The Sacramento Valley shipped over 12,000 cars of fresh deciduous fruits during the summer.

Preliminary work is being done on the reclamation of a tract of land near Elkhorn, Yolo County.

Congressmen over the state are using the local newspapers to advertise their annual seed distribution.

Improved railway facilities will greatly extend the beet planting area near the Hamilton Sugar Factory.

One Sutter County farmer reports 1700 sacks of beans from 65 acres and 700 sacks of buckwheat from 44 acres.

The home of General Bidwell at Chico will be reproduced at the coming Citrus and Olive Exposition at Oroville.

An agent of the Department of Agriculture was in Oroville recently, investigating as to the "sweating" of oranges.

A five mile drainage ditch is to be excavated westerly from Wheatland. Dynamite will be used largely in the excavation.

Siskiyou County contemplates an irrigation system which will cover nearly 120,000 acres and will cost about a million.

The reclamation district near Knights Landing has installed a forty inch pump with a capacity of 60,000 gallons a minute.

The seedless apple has bobbed up again, and this time Modoc County claims a tree with perfectly seedless and coreless apples.

Milk Inspector for Vallejo is now taking samples of milk which it is declared are altogether too short on butterfat and too long on water.

A gathering of dairymen and creamerymen of northern coast counties recently met at Ferndale and discussed methods of improving quality of dairy products.

Arrangements are made with the fruit express companies by which it is hoped that the citrus districts of Butte County will soon be supplied with refrigerator cars.

Santa Rosa is making extensive preparations for the coming State Fruit Growers Convention. Commissioner Galloway and Mr. W. I. Newcomb are heading the committee work.

Improved methods of packing grapes will cause extensive shipments to be held in cold storage in Eastern markets until the holiday time. It is thought these grapes will largely replace European grapes, which have been a favorite heretofore.

A meeting of the Corning Olive Growers Association recently held elected the following officers for the coming year: president, R. D. Forrest; vice president, J. B. Maynard; secretary, O. S. Davis; treasurer, Dr. E. E. Dotson; committee on constitution and by-laws, Dr. E. E. Dotson, S. Larrabee and G. V. Santee.

Central California

Several calves in herds near Tulare have died of blackleg.

A quantity of squirrel poison has been received at Clovis.

Porterville, Tulare County, is shipping oranges to the Orient.

Santa Clara County is to distribute 30,000 cartons of prunes at the Chicago Land Show.

Coalinga, Fresno County, is discussing the advisability of forming an irrigation district.

The annual convention of the Farmers' Union of California was held at Modesto last week.

Second crop Muscats are being delivered at Dinuba, the crop going principally to the wineries.

A bee keeper at Tulare estimates fully $23,000 worth of honey shipped from that section this season.

The first annual poultry show at Modesto, held recently, was declared to have been a complete success.

Twenty-two cars of Arizona stock were recently shipped to one Tulare County ranch for winter pasture.

Santa Clara Valley Pomona Grange No. 4 recently met in San Jose and elected officers for the coming year.

Terra Bella Development Company is developing a fine lot of water in wells from three to four hundred feet deep.

The Monterey Bay Counties League has been organized to look after the welfare of the section surrounding Monterey Bay.

At the last Tulare Grange meeting John Tuohy made an address on "Why Are There So Few Farmers in the Legislature?"

About half of the sweet potato crop of Merced County has been sold and shipped; the remainder is being stored for higher prices.

Rates on raisins from Fresno to San Francisco have been reduced, and are now the same to either San Francisco or Los Angeles.

It is urged that the table grape growers prepare for a campaign of advertising of table grapes before another shipping season.

A heavy frost visited sections of Fresno about the middle of the month, doing some damage to the more ten der garden truck and olives.

The raisin situation is looking rather better, and several hundred tons are said to have changed hands within a short time recently.

The Spreckels Sugar Factory closed its run about the middle of the month. Many improvements will be made in the factory before the next season.

Madera County is making some magnificent apple exhibits in the Ferry Building at Sacramento. They come from the orchard of Mr. Frank Femmons at Ahwahnee.

Members of the Grange in California are being assessed 25 cents per year to cover the expense of establishing and maintaining Grange Headquarters at the Panama Pacific Exposition.

Several San Joaquin boosters are discussing the advisability of forming a monster organization to look after the interests of the entire valley. A meeting will be held in San Francisco Nov. 25.

Southern California

A carload of cotton was shipped from Holtville to New Orleans last week.

Oak Glenn, San Bernardino County, is just finishing on its last red apple shipments.

Beet growers of Talbert, Orange County, are preparing seed bed for next season's crop.

San Diego and Imperial are pulling for a section of the state highway between those two points.

A tract of land near Palmdale, Los Angeles County, will be improved and irrigated, and later subdivided.

Imperial Valley barley fields are already sufficiently advanced so that they are being used for pasture.

The Riverside Fruit Packing Company will build a new packing house on the line of the Salt Lake Railway.

Some three year old trees in the new apple district at Beaumont produced some excellent fruit this season.

The Medical Milk Commission of Riverside has granted certification to one dairy which will supply pure milk to that city.

Herds of cattle are now being shipped into the Huntington Beach section to be fattened on sugar beet tops and pulp.

The Imperial County Fair was by long odds the best ever, and gave a remarkable exhibition of products of the Colorado "desert."

Olive planters have scoured all the nurseries of the southern part of the state, and declare that hardly an olive tree is left unsold.

A number of Imperial Valley cantaloupe growers recently met in Los Angeles and discussed matters pertaining to handling the next cantaloupe crop.

Work on the Yuma Reclamation lands below the Laguna Dam is progressing rapidly, and the former desert section is taking on a vastly different appearance.

A number of growers of Redlands recently combined to fight charges made by a fumigation contractor, but the board of supervisors made ruling that the charges were just.

Redlands, San Bernardino County, will require twenty-one packing houses for the handling of the coming big crop of oranges. The estimate is for 5,000 cars for that one section.

The Interstate Commerce Commission has granted request to reopen the lemon rate case, and has so notified the officials of the Southern Pacific, Santa Fe and Salt Lake Railways.

The Imperial Valley is greatly elated over the winning of a thousand dollar silver cup for the best bale of short staple cotton at the National Land Show in New York City last week.

The Beet Growers Association, which made request of the sugar factories for a $1 raise, has been granted 50 cents, with an additional 30 cents per ton for each one per cent above fifteen.

The Anaheim sugar factory closed its first season's run with a record of 12,000,000 pounds of sugar and 36,000 bags of dried pulp. Over 43,000 tons of beets were sliced. The campaign was 90 days long.

The Coast

The Pima County Fair was held at Tucson last week.

Yerrington, Nev., will ship 700 carloads of potatoes this fall.

A Texas stockman is planting extensively of prickly pear cactus.

A shortage of hogs is reported in the country about Genesee, Idaho.

Orange growers near Yuma are shipping some exceptionally fine fruit.

Yuma farmers are anxious for the establishment of a beet sugar factory.

The Oregon Wool Growers Association will meet at Baker City, Oregon, this week.

Experts of the Department of Agriculture are investigating soil in the Salt River Valley, Ariz.

The "All-American Roadway" plan between El Centro, California, and Yuma, Arizona, is making headway.

Lack of proper threshing machinery has caused great delay in grain marketing of Klamath County, Oregon.

A $5,000 stock barn and a large judging pavilion have just been erected by the University of Idaho at Moscow.

A new apple has been developed at Gold Hill, Ore., said to possess all the good points of the Newtown and Spitzenberg.

The Evening Star Grange of Oregon has recommended that all Grange dues of that state be fixed at 15 cents a month.

A convention of farmers was recently held at Colfax, Wash., to protest against the unjust taxation of farm lands.

Colorado, one of the biggest potato producing states, is now importing potatoes for home use for the first time in ten years.

One prune tree at St. Joe, Idaho, yielded 280 pounds of prunes and netted its owner $14. The tree was a five year old.

The State Veterinarian of Oregon has issued a dipping order for all cattle runnig on range, owing to prevalence of scab.

One apple grower at Cloverdale, Wash., harvested 10,000 boxes of apples, which brought him $15,000. The orchard is fifteen acres.

Seattle, Wash., experienced this year the coldest November weather ever, and that prior to the 15th of the month. It is claimed the temperature dropped to 20 degrees below zero.

Land which will be thrown open to entry in Klamath County, Oregon, is now being inspected by settlers with an idea of filing on Jan. 15. Much of this land contains valuable timber.

A process of sweating wheat prior to manufacturing the flour has been tried at the mills at Harrington, Wash., and declared to excel flour manufactured by the ordinary method.

It is estimated that fifteen carloads of nursery trees, largely apples, will be shipped from Toppenish, Ore., this fall., and that next spring's delivery from the same nursery will average nearly forty cars.

Irrigation, which has greatly increased the size of prunes at West Stayton, Ore., is declared to have far more than paid for itself in the increased price per pound. The prunes in one orchard averaged 30's.

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HOG RAISING.

By Mrs. M. E. Sherman.

The man with a good stand of alfalfa and plenty of water to keep the alfalfa growing, has a cheap way of turning off pork. Now on an acre of alfalfa eight hogs can readily grow up. A sow with a litter of ten will do well all season on half an acre of alfalfa field. Usually double this number of stock is placed on a piece and when they have eaten it down they are put on another piece. This saves the land from excessive tramping. After the pigs are taken off one piece, if it is irrigated and disked, enough to loosen the soil, the alfalfa will stand heavy close grazing for many years. The pigs should have rings in their snouts to stop their rooting. Alfalfa roots are very sweet to them and they will destroy it rapidly if allowed to have their own way. It makes man feel his superiority when he sees the pigs destroy the plants that would feed them all year. The horses and cattle too will eat the trees that later they would enjoy as shelter against the sun. Forethought, like speech, is the divine in the human race and lifts some of us far above the animal world.

Breeds.

Now I wish to say that this matter is my own opinion and I hope no one will feel hurt over it. I once hurt somebody's feelings deeply because I did not like the breed he raised as well as some other—ignorance, no doubt, on my part. Well, in California at the present time we find black hogs mostly in use. White pigs sunburn and grow mangy in the warmer parts of the state. One does sometimes see white ones in butchers' bunches, but they are rather inclined to be scrubby. The Poland China and Berkshire breeds are a safe investment for any one as they are here in numbers sufficient to make it easy to secure new males whenever needed. The crosses of either of these breeds on the common sow give even-colored and shaped offspring. There are a few good Tamworths and Duroc Jerseys (red animals) shown at the fairs. One lot of mule-footed and of Hampshires are also in the state. The Hampshire is a black hog with a distinct white belt around his middle, while the mule-footed has a solid hoof instead of a cleft one. Neither of these distinctions make them any more valuable for pork making, but are fancied by breeders. As pork makers the half-bloods of these two last named have not been offered in number enough to make any records better than the Polands or Berks.

Fattening.

In many parts of California hogs are not carried to heavy weight but are turned off fat at a hundred and fifty to two hundred pounds. The actual feeding on grain has not been profitable except to a limited extent. The alfalfa pastured hog readily reaches this weight in nine months to a year. There are some favored places where there are by-products or special amounts of slops that make the fattening a simple and cheap matter. Egyptian corn is the usual fattening food the rancher uses with alfalfa. Eight or ten weeks on corn will finish the pork off nicely. If there is any skim-milk or buttermilk to be had, it helps in feeding whole Egyptian corn in the head. Water will do, however, if a little kitchen slops are added for flavoring and into every gallon a pound of middlings is stirred and poured over the corn. The loose leaves and broken-up pieces of alfalfa from the bottom of the barn should all be saved for the hogs. At night stir into ten gallons of water ten pounds of middlings or rolled barley, ten pounds of waste kitchen refuse or of the alfalfa from the bottom of the mows, turn this over fifty pounds of the Egyptian corn in the night time. Feed it in the morning and one pound of pork will come from every four pounds of solids in this feed. These weights are made by moderately well-bred pigs, those that have some good blood in them. The tule hog is, like the old razor back of the South, impossible to fatten. This little matter of blood makes it at first impossible for a man to tell exactly from how much feed he can make a given amoun of pork. After a bunch of hogs has been bred up for a term of years the amount of food will be much less than in a common lot.

Sows.

The raising of the young pigs depends on the amount of milk the mother furnishes them. This can be increased by careful feeding. The same slop is used, leaving out the Egyptian corn entirely. Corn does not make a good milk food for the sow, as it produces constipation. Citrons, melons and roots of any kind, keep the digestion of the sow active. Constipation destroys many young pigs every year; sometimes roots and melons alone will keep this regulated, but it is often necessary to feed the sow a half pound of oil cake meal a day. Whenever the three day old pigs look dumpy and act dizzy, the bowels should be looked to as the cause. In every pig yard a certain amount of bone-making material should be supplied, a box containing ashes, charcoal, sulphur and granulated bone with a little salt added. The proportions are not very particular. We take a forty-pound box and fill it full of clean ashes, then put into this several shovelsful of charcoal or charred bits of wood, a two quart can of sulphur, the same of granulated bone from the chicken yard feed box and a pint of coarse salt. Shovel it over to mix it up and put the box where the pigs can eat of it freely. Sometimes a box of soft coal is put in for them to eat.

These sound like queer dishes to serve the pigs, but they esteem them highly. The fact is a pig as a rooting animal in its natural state swallowed its peck of dirt monthly instead of annually.

Alfalfa.

In hog feeding, then, the one best and cheapest food is alfalfa. Alfalfa pound for pound when dried is as full of nutriment as bran. Alfalfa green or alfalfa hay may make all of a pig's food until time to fatten him for butchering. Then add sorghum or Egyptian corn instead of the Eastern Indian corn. The differences in these three as fattening foods are not great

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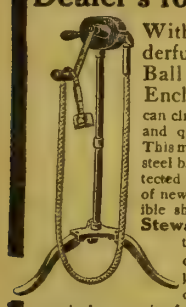

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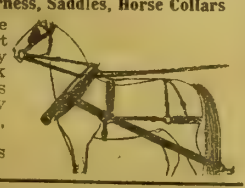

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Importer and breeder of RED POLLED CATTLE, SHROPSHIRE SHEEP, RAMBOUILLET SHEEP, HORNLESS AMERICAN MERINO SHEEP. Both sexes for sale. Take electric car at Petaluma or Santa Rosa for LIVE OAKS STATION. Address all mail to
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The Whiting Jersey Stock Farm Co.
Is making the very best strains of blood fresh from the Island of Jersey a specialty. Whiting Jersey Stock Farm Co., Heber, Cal.

enough to be of moment to the feeder. Feed with the grain enough roots, citrons, pumpkins or green alfalfa cut up to keep the digestion active. Fattening hogs should have at least three meals a day, all they will eat clean each time, feeding at regular times so that when their stomachs are full they will go and lie down quietly until the next meal time. When hogs are fed irregularly they rush to the troughs whenever a man appears around the yards. This is not good for fattening an animal; they should have as nearly a rest cure as possible. Certainly all idea that they have to squeal for dinner must be banished from their minds. Perfect peace and quiet will make them fatten up cheaply.—M. E. Sherman.

TRESPASSING STOCK.

In answer to query as to redress of owner of land as against owner of trespassing stock, Mr. Payne has given the following extended and complete information:

Trespassing Stock.

Senate Bill 630 introduced by Senator Gates for the purpose of amending Section 1 of the Act of 1907, so that the property owner might recover damages, although his property might not be fenced, never got beyond committee, and the law of 1907 is still in force, the practical result of which is to preclude a property owner from recovering damages caused by trespassing stock, unless the property is, at the time of the trespass, entirely enclosed by a substantial fence or other enclosure.

The property owner might proceed under the act of 1901 and amendments, which provides that any person upon whose lands an estray is found, may take up such animal, confine the same in a secure place, and within a week thereafter publish in some newspaper of general circulation, printed in the county, and also file with the county recorder, a notice containing a description of the animal with the marks and brands, and the probable value of the animal, and a statement of the place where the taker-up found, and where he has confined the same. The county recorder shall receive for filing the notice fifty cents; notice shall be published for two weeks. If, however, the animal has the owner's brand or mark upon it, which has been recorded according to law, or if the finder knows the owner, or the person having charge thereof, then, within five days after taking up, he shall notify the owner or the person having charge, with a notice in the same form as above specified; this notice shall be in lieu of publishing and recording. The taker-up is entitled to fifty cents for giving the notice. If, within thirty days, the owner claims the animal he shall pay the cost of recording and publishing notice; thirty cents per day for the keeping and care of each horse, mule, cow, etc.; ten cents per day for each sheep, goat or hog, providing that the person who has taken the same has properly fed and watered the animals while under his care.

There is also a provision for a pound district for any township where twenty-five residents petition for the same, the poundkeeper's duties being to take possession of estrays, and to have a lien on the same for expenses, and for the same amounts above specified.

If no one claims the animals within thirty days after filing the notice, or, if he claims the same but fails to pay, or fails to commence suit as in

The New 20th Century Harrow

Patented

This Shows a 3-Section (90 Teeth) Six-Horse Harrow

This unexcelled, improved, automatic, self-cleaning harrow, which can be operated by a twelve-year-old boy, is a great labor saving device.

The above illustration shows with what ease harrowing can be done by this method, as a riding cart is attached to our harrows, and the operator simply presses a foot lever when he desires to clean the harrow from rubbish, and then the harrow cleans itself automatically.

The old method of cleaning harrows, requires a great deal of strength and labor, as every farmer knows, and by nightfall the operator is exhausted, while with this new invention there is no strength or hard labor required.

Our standard seasoned oak frame harrow is five feet long, five bars to the section (30 teeth to the section), and as many sections as are desired can be used. The illustration also shows a rear action which may be desired by some farmers. This action is extra. It drops to the ground while the main harrow is in the air cleaning itself.

You can use the teeth from your old harrow, as we can supply the harrow complete without teeth. Holes for the teeth bored to order.

The self-cleaning attachment can be purchased separately and you can attach it to your old harrow. The riding cart can also be purchased separately.

This self-cleaning attachment can also be supplied for traction purposes. It is equally good for light and heavy work.

Any size harrow made to order. Write for prices.

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This Pump
Will Interest the Irrigator

Pump has Water Sealed Gland, Enclosed Balanced Impellor. Will not cut out by sand. Can be placed in a smaller pit than any other pump. Our Bulletin, C12, tells all about it. The pump can be seen in operation at our places of business. We have a permanent branch house at

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Krogh Mfg. Co.
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Let us send you some of this ideal Washing Powder for the dairy. We ***guarantee*** it to leave the skin on the hands and take the grease off the dairy utensils. Write us now for a trial order. ***50 lbs., $2.25; 100 lbs., $4.00,*** F. O. B. cars Los Angeles.

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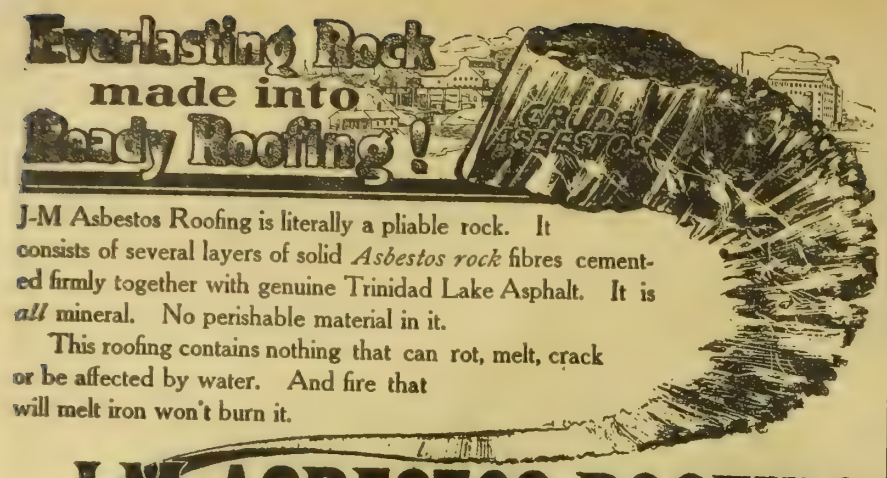

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J-M ASBESTOS ROOFING

is still in service, without any painting or graveling, after more than a quarter of a century of wear. Get this roofing from your dealer—or send your order direct if he can't supply you. Sample of the curious Asbestos Rock sent free, if you write our nearest branch for Booklet W55

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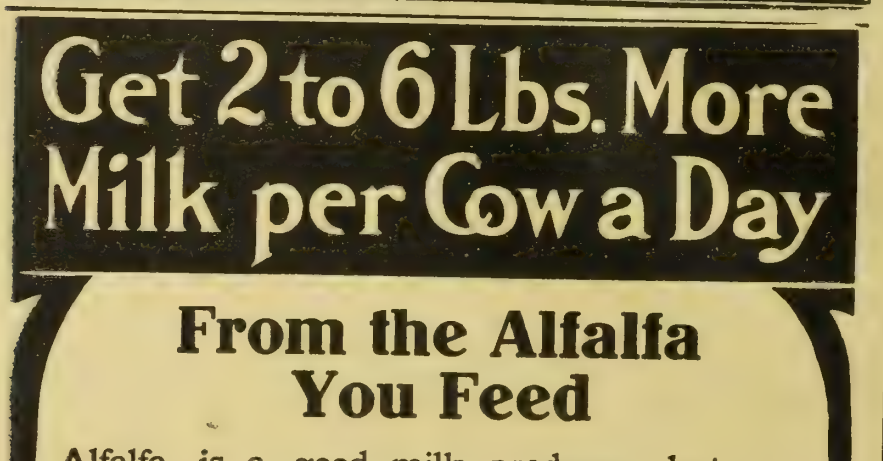


Get 2 to 6 Lbs. More Milk per Cow a Day

From the Alfalfa You Feed

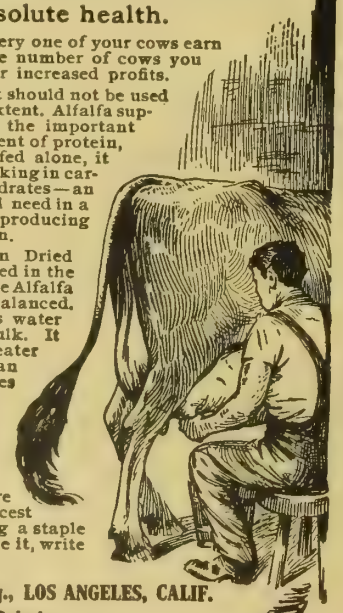
Alfalfa is a good milk producer—but you can feed it so as to get 2 to 6 pounds more milk per cow a day.

Your cows like it—but it can be made still more palatable. It is a healthful feed—but it can be fed so as to insure your cows being and keeping in absolute health.

Alfalfa fed with Steam Dried Beet Pulp will make every one of your cows earn $10 to $20 more a year. Multiply these figures by the number of cows you own and you can safely count the result as your increased profits.

Alfalfa is an unrivalled feed for the dairy cow—but it should not be used alone. Cows need variety. They are human to that extent. Alfalfa supplies the important element of protein, but, fed alone, it is lacking in carbohydrates—an equal need in a milk producing ration.

STEAM-DRIED BEET PULP
Just Like Roots
Makes More Milk



Steam Dried Beet Pulp is the ideal combination with Alfalfa. Used in the proportion of 8 lbs. to 15 or 20 lbs. of Alfalfa Hay—all the Alfalfa a cow will eat—gives a ration almost perfectly balanced. It is light, bulky, succulent, easily digested, absorbs water quickly and swells to about six times its original bulk. It is cheaper than bran or rolled barley, and it is a greater milk producer. Steam Dried Beet Pulp is the clean beets dried by steam as soon as the sugar factories have extracted the sugar. Be sure you get Steam Dried. It is uniform in quality and color, never burned or blackened by smoke, always clean and pure. Keeps indefinitely. For convenience in handling, it is packed in 100 lb. sacks.

Steam Dried Beet Pulp is also a splendid food for horses, pigs and poultry, and raisers are placing more and more dependence upon it as a feed for their choicest stock. Steam Dried Beet Pulp is rapidly becoming a staple product among feed dealers. If yours does not handle it, write us direct. We will see that you are supplied.

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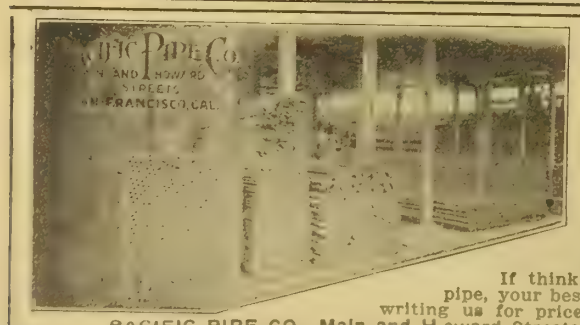

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the act provided, then the taker-up shall notify a constable or any officer of the township or county in which said animal or animals is held; the notice shall specify that he has complied with the provisions of the act, that a claimant has failed to appear, or has appeared but failed to pay the expenses and has failed to prosecute an action for the recovery of the animals, and that such animal or animals are held for sale; the constable shall proceed to sell at public sale such animal or animals, in conformity with the law for executions, and shall be entitled to the same fees as under sales for execution. Out of the money realized from the sale, after paying fees, the constable shall pay the taker-up his expenses and costs as in the act provided, and the surplus he shall pay to the county treasurer for the owner. —Edw. L. Payne.

THE MAN AND THE COW.

Every instant that milk stands in the stable it gathers contamination.

An ill-tempered man is a misfit in the dairy business.

The gospel of clean milk is not a strainer gospel, but a gospel of prevention.

Men who will not obey the "please be clean" advice, should be subjected to sterner advice.

The man who produces pure, clean milk for the babies in the city has a clear conscience, clean hands and a pure heart.

The silo is the best solution of the problem of short pastures.

The silo helps solve the problem of making a profit from $100-an-acre land.

Well cured ensilage corresponds with the nature of the cow.

The ration should be balanced to meet the needs of the cow at all stages of lactation.

The economy of a ration depends not upon the actual cost of feed per day, but upon the cost of producing a pound of butter or milk.

Life is too short and too strenuous to make new breeds or to dairy with cows not of the dairy form and temperament.

Cows that do not possess the dairy form are unable to endow their progeny with the dairy temperament.

Early cut clover or alfalfa cured under caps and grown as thick on the ground as possible makes the best hay for dairy cattle.

The breeding-bull should not only be the son of a cow with a large milk record, but the son of the cow possessing the true dairy form.

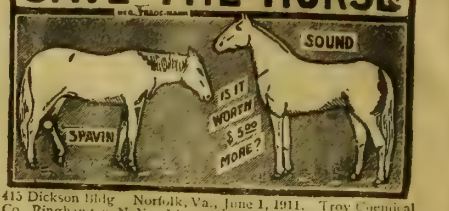
A scientific education combined with common sense and a natural love for the cow is the foundation of success in dairying and getting together a choice herd of cattle.

There is no better system of feeding for milk than to give each cow a ration according to the work she is doing and to properly nourish her body. —Farm World.

FIGURING CAPACITY OF SILO.

A reader inquires how to figure the capacity of a round silo. Here is the formula: Square the diameter and multiply it by .7854. The product is then multiplied by the altitude, which gives the contents in cubic feet. The weight of a cubic foot of ensilage is figured at 40 pounds. A silo 14 feet in diameter and 24 feet deep is figured as follows: 14x14 equals 196; 196 x .7854 equals 153.9; 153.9 x 24 equals 3693.6, the cubic feet of the silo. Forty times 3693.6 equals 147,744, the pounds, or 73.8 tons, the contents of the silo.—Kansas Farmer.

SAVE-THE-HORSE



415 Dickson Bldg. Norfolk, Va., June 1, 1911. Troy Chemical Co., Binghamton, N. Y.: I have used your "Save-the-Horse" on three occasions for Bone Spavin, Bog Spavin and Side Bone and have cured every case. I have not had to ask for my money back, so I want to use it again. Enclosed find check for $5. K. F. Grant.

$5 a bottle, with binding contract to refund money. Send for COPY, BOOKLET and LETTERS from Bankers, Farmers and Business men on every kind of case. Permanently Cures Bone and Bog Spavin, Thoroughpin, Ringbone (except low), Curb, Splint, Capped Hock, Windpuff, Shoe Boil, Injured Tendons and all Lameness. No scar or loss of hair. Horse works as usual. *Dealers or Express prepaid.*

Troy Chemical Co., 47 Commercial Ave., Binghamton, N. Y.

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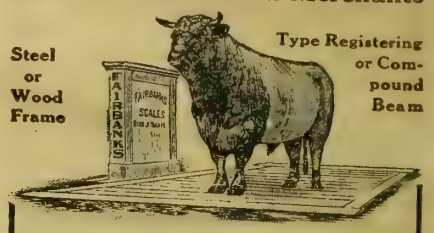

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ANDERSCH BROS., Dept. 100 Minneapolis, Minn.

Several cases of glanders have appeared recently in Idaho.

Profit in the Poultry Yard

Practical poultry people who may have ideas from their experience as to methods of feeding and housing and general care of poultry will confer a favor upon the Cultivator and its circle of readers by sending in concise accounts. Mrs. Basley is always willing to answer queries, which with the experience of others should make this a most valuable feature in poultry life on the Coast. Opinions or matters of a personal nature should be omitted, but a concise statement of facts is always valuable.

THANKSGIVING TURKEY.

Mrs. A. Basley.

Thanksgiving Day has almost come around again, another year is nearly ended, the harvest time is past. It has been a good year, the harvests have been good, the prices above the average, and the whole country rejoices in continued prosperity, with a bright outlook for the future.

Thanksgiving Day is an American institution. No other nation holds a similar beautiful festival and no other nation has so many blessings, the gifts of peace, prosperity and liberty for which to render thanks to the Giver of all good gifts.

The turkey is the king bird of Thanksgiving Day and it is right for him to be the leading dish, for as Thanksgiving is an American institution, so the turkey is preeminently an American bird, the largest of American game birds, indigenous to this country and now the largest and most profitable of domestic fowls.

Every year we hear of a shortage in the turkey market on or about Thanksgiving time and the prices rise year by year until now they are almost prohibitory. At the prices which have ruled for turkeys in recent years they are much more profitable than hogs, sheep or cattle. With proper care turkeys are not difficult to raise. They require close attention for only a few weeks after they are hatched, and that attention is merely to keep them from getting damp from dew or rain, and not overfeeding them or giving them corn when quite young. After that time they are perfectly able and more than willing to forage for themselves and will find the larger part of their living in the fields, gleaning every scattered grain that would otherwise be lost, and making dollars for their owners by feeding off pernicious insects and waste grain or weed seeds. A farmer's wife who has a big crop of turkeys to sell about this time of the year will reap a golden harvest and have spending money for Christmas. Of all our domestic fowls the turkey is the leader as far as profits are concerned and I wonder that many more are not raised on the Pacific Coast.

Preparing Turkeys for Market.

Turkeys which have been on the range during the summer months should as the fall comes on and the insects and grains disappear be fed some grain to bring them home at night, and to send them to bed with a full crop. Turkeys do not bear confinement with any degree of patience, and if shut up soon begin to lose flesh and may in a short time be almost skeletons. They need liberty, or at any rate partial liberty to do well. They do not stand the stuffing process for more than ten days.

In the first place the turkeys should have had plenty of sharp grit and oyster shell to furnish the material from which to make large bone and also should have been kept free from lice. All summer long and into the fall they have devoured the insects and grasshoppers but with the chilly fall weather these are becoming scarce, the weed seeds are ripening while nuts and acorns are falling, for nature is providing with a liberal hand for the necessary winter fattening.

There is a flavor belonging to the meat of a range-fed or wild turkey that cannot be found in one raised in confinement or even in a barnyard, for necessarily the food cannot be so varied and wild berries and nuts, the seeds of the pine cones, the beechnuts, hazelnuts, acorns, berries and spicy seeds impart a flavor not to be excelled and the turkeys fed on these are toothsome enough for the most epicurean appetite. All that a free range turkey may need is a feed of hard dry corn at night.

For turkeys on limited range or on range that may be bare of insects, nuts and berries, we may have to assist nature and substitute for her fare the best we can find and undoubtedly that is good hard corn a year old, so as to be thoroughly ripe and dry, for there is something in new corn which is apt to disagree with turkeys. When turkeys can be kept in an olive yard, or a sweet apple orchard, a little corn at night is usually sufficient for fattening them.

Turkeys that have not the advantages of freedom can be successfully fattened in a yard. The way I feed is to take two parts of corn and one part of barley, soak over night and in the morning put on the stove to boil, let it cook slowly until it begins to soften, then set aside, covered till supper time, when it will be cool enough to feed, give this three times a day as much as the turkeys will eat up in about fifteen minutes, then remove till next meal time. I add a chopped onion at supper time as that is a stimulant to the liver and the digestion. Fresh water must be kept before them at all times.

Boiling the corn removes whatever it is in the new corn that disagrees with the turkeys. One year I had excellent success in fattening turkeys by feeding them the same food as for fattening chickens, that is, equal parts of heavy bran, corn meal and oatmeal (rolled breakfast oats) mixed with sour milk or buttermilk, three times a day.

In fattening turkeys begin by feeding only once a day and gradually increase. Do not fatten the turkeys that you intend to use as breeders for the fat weakens the organs of reproduction in both sexes and the offspring will be weak and small or the eggs will be infertile. This I have found almost invariably the case where people have had me investigate the cause of eggs not hatching or the poults being weakly, the parents had accidentally been fattened at Thanksgiving time and the next spring the eggs were weak.

When turkeys get sick from being fed for market, it usually shows a lack in the constitution and is often the result of a slight attack of liver trouble which they had seemed to get over in their early life. The best thing would be to turn them out on the range again or to doctor them by giving them a dose of epsom salts and then following it with ten drops of tincture of nux vomica in a pint of water, allowing no other drinking water. Then give freely of chopped onion mixed with bran and eat them as soon as possible. Do not breed from those turkeys, for though they may be perfectly well they will not breed a vigorous constitution into their offspring.

Turkeys should be kept twenty-four hours without food before killing. They may have water but no food, this is to empty the crop, gizzard and bowels and prevent the food which would remain in them from souring and giving the whole carcass a bad flavor.

Roast Turkey.

Remove all the feathers carefully, singe over a burning newspaper on top of the stove; then draw it nicely by first cutting the skin down and across the back of the neck so you can draw the crop out and cut off the head, and tie the neck close to the body by drawing the skin over it. Now rinse the inside of the turkey out with several waters and in the next to the last mix a teaspoonful of baking soda; often the inside of the fowl is very sour, especially if it is not freshly killed. After washing wipe the turkey dry inside and out with a clean cloth, rub the inside with some salt, then stuff the breast and body with some "Dressing for Fowls." Sew up the turkey with a strong thread, tie the legs and wings to the body, rub it over with a little butter, sprinkle over some salt and pepper, dredge with a little flour; place it in a dripping pan, pour in a cup of boiling water, and set in the oven. Baste the turkey often, turning it around occasionally so that every part will be uniformly baked. A fifteen-pound turkey requires between three and four hours to bake.

Dressing for Fowls.

Take a pound loaf of bread. Put

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COULSON'S EGG FOOD

Pillars of Strength

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Poultry Raising

Coulson's Chick Food is carefully prepared with due regard to the delicate mechanism of the little chick. It is rightly proportioned, properly ground and composed of properties upon which the little fellows can live and prosper. It will save your chicks and put them on the road to a commercial return for their owner. INSIST ON GETTING COULSON'S CHICK FOOD IF YOU WANT THE BEST.

Coulson's Egg Food is a most wonderful foundation for liberal egg production. It is **not** a stimulant. It is the egg itself. The hen transforms it into the egg of commerce. By feeding Coulson's Egg Food you simply give the elements from which she builds her eggs. Analysis will show this. SUCCESSFUL POULTRYMEN USE AND RECOMMEND COULSON'S EGG FOOD.

These foods are for sale by all reliable poultry supply houses

Coulson Poultry & Stock Food Co.

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Germain Seed & Plant Co., Los Angeles, Agents for Southern California

Bulbs and Seasonable Seeds

Our importation of Dutch Bulbs has arrived. This stock is the very best, and our prices are low. Come and see the display or send for free Catalog at once. Also for our large Seed Catalog, if you haven't one.

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Even if you don't want one for four to six months, you can save 25 per cent by buying now. A special offer for cash, and to make room. 50-egg size only. Send for Catalog and particulars. Big bargain. Strong guarantee.

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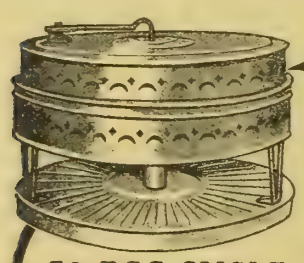

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CHICKS THAT ARE WELL HATCHED

from mature, healthy, and strong stock which has been bred for utility purposes for years, write to me. I want your order, for I know I can satisfy your wants, if you want the best

CHICKS THAT WILL GROW

for I have satisfied hundreds of others. I am now booking orders for future delivery. Capacity of over 30,000, which is an increase of over 200% in the last two years.

THE THOMAS HATCHERY

CARL D. THOMAS, Proprietor Petaluma Cal. Rural Rt. 2, Box A

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JUBILEE INCUBATOR CO., Sunnyvale, Santa Clara Co., Cal

SAVE YOUR INCUBATOR CHICKS

Send us the names of 5 or 10 of your friends who raise poultry and receive FREE our booklet entitled, "White Diarrhoea, the Greatest Foe to Chick Life." This booklet makes Poultry Profits Possible. It treats of only one disease, white diarrhoea—commonly called bowel trouble: gives cause, treatment, and a cure. Write today. It's free, postpaid.

F. K. REMEDY CO. ARKANSAS CITY, KANSAS

When writing **advertisers,** mention Cultivator.

it into a suitable dish, cut in slices and pour cold water over it (not warm for that makes it heavy). Now take up a handful at a time and squeeze it hard and dry with both hands, placing it as you go along in another dish; this process makes it very light. When all is pressed dry, toss it all up lightly through your fingers. Add pepper, salt,— about a teaspoonful,— also a teaspoonful each of powdered summer savory, sage and parsley; add half a cup of melted butter and a beaten egg. Work thoroughly altogether, and it is ready for dressing. A little chopped sausage in turkey dressing is considered by some an improvement. Oyster dressing is made with the same ingredients as the above, with the exception of half a can of oysters slightly chopped and added to the rest.

Cranberry Sauce.

One quart of cranberries, two cupfuls of sugar and a pint of water. Wash the cranberries, then put them on the fire with the water, but in a covered saucepan. Let them simmer until each cranberry bursts open; then remove the cover of the sauce pan, add the sugar and let them boil twenty minutes without the cover. The cranberries must never be stirred from the time they are placed on the fire. This is an unfailing recipe for a most delicious preparation of cranberries.

A PLEA FOR PURE BREDS.

How many visitors at the recent fairs contracted a more or less severe attack of "chicken fever;" how many have since purchased a few birds and are now deep in poultry culture? Of those who were keeping poultry before there are sure to be a large number who gained enthusiasm for their work and went back home with better "heart" for the duties in the poultry yard.

Breeders of mongrel fowls are very apt to feel a dissatisfaction with their multicolored flock when looking over the pure breds in the coops, and feel a desire for something of better quality than they have at home. This is the best time of the year to get good stock at a reasonable price. Breeders are glad to sell stock now for much less than in the spring in order to make room and save feed.

It is rather strange, when one thinks of it, that the opportunity to get pure bred stock at a reasonable price is not more often taken advantage of. When a breeder has spent years, and not inconsiderable money, in bringing a flock up to a high grade of perfection, he has something that, strictly speaking, money does not pay for, and yet some people insist that "a chicken is a chicken." In making a plea for pure bred fowls, we cannot say they will take care of themselves, be free from vermin or stand abuse any better than mongrels. They will eat just as much if given the opportunity. But any flock of pure breds is far more attractive in appearance than a mixed flock, make a more uniform lot on the market. Having the same characteristics, they make much more uniform growth and, as the variety may be large or small, respond to care and feeding in the same general manner.

We have yet to see a flock of mongrels that will average in weight with any of the heavy or even general purpose breeds. Of course, if there has recently been a cross with a large variety, the result will be birds of much larger size. This, however, would not be strictly adhering to the principles of mongrel breeding, if principle it might be called.

Occasionally one hears of very creditable feats performed by a flock of mongrels. Perhaps they have outclassed a flock of the neighbor's pure breds. The owner at once condemns pure breds and extols his own mixed lot. Was this due to the fact that they were mongrels? Never. Give that man a flock of pure bred birds of the same age, and let him give them the same care, and then we'll see which flock responds most kindly to proper care and surroundings.

Is there no satisfaction in having pure bred stock of any kind on the premises, no matter whether it be sheep, horses, cattle or poultry? Shall we take no pride in anything? And, what is of still greater significance, will we not give more attention to any object in which we take great pride? Profits may be reached in proportion to the intelligent care given the fowls. Then if a pride in our possessions leads us to give them better care by all means let us possess something of which we can be proud.

Look over any flock of pure bred birds, black, white or parti-colored, and if their uniformity of size and color is not pleasing to the eye, there is something wrong with the organs of sight. Better visit an oculist.—Poultry Tribune.

CALIFORNIA POULTRY SHOWS.

Oakland.—Nov. 21-27, 1911. Alameda Country Poultry Association. Wm. T. Fros, secretary, Oakland.

San Diego.—Nov. 28-Dec. 2, 1911, San Diego Pigeon and Pet Stock Club. H. J. Gottesburn, secretary, Coronado.

Corning.—Nov. 29-Dec. 2, 1911. Corning Poultry Association, E. L. Randall, secretary, Corning.

Escondido. — Dec. 6-8, 1911. Escondido Valley Poultry Association. B. V. B. Lincoln, secretary.

Petaluma.—Dec. 6-9, 1911. Petaluma Poultry Association. H. R. Campbell, secretary.

Napa.—Jan. 4-6, 1912. Napa County Poultry Association. Wallace-Rutherford, secretary.

Santa Ana, Dec. 27-30. Orange County Poultry, Pigeon and Pet Stock Association. S. J. Jackman, President.

San Diego. — January 12-18, 1912. The Fanciers Club of San Diego. V. Davis, Secretary.

Los Angeles.—January 4-10, 1912. Joseph E. Davis, Secretary, R. D. 1, Box 48, Los Angeles.

FRESNO SHOW.

John F. Forney of Kingsburg is pushing, with Secretary Andrews of the Fresno Poultry, Pigeon and Pet Stock Association for a big show in Fresno, December 12-16. The Fresno show has drawn some of the best birds in California for several years, and we doubt not the Central California poultrymen will gather in numbers and exhibit more and better birds than ever before. Those desiring information may write to Mr. George R. Andrews, Secretary, at Fresno.

When hens fly and cackle and you cannot see anything to disturb them, set a trap in some protected corner and you will be likely to catch a rat.

Cabbage is one of the very best vegetables to feed to poultry, as it keeps green a long time and the hens enjoy picking at it. Hang it where they can get at it readily without scattering it about or soiling it.

MOLTING.

A great deal is being written in the poultry and farm papers, especially at this season, regarding the molt. Some advise forcing the molt, while others do not believe in it. But it is generally accepted that it is best to assist nature and feed a food that will be suitable for the formation of feathers and the general building up of the systems.

If we wish our flock to come through the molt early and uniformly we can accomplish it very easily. The method is to withhold part of the feed for about three weeks, feeding principally of vegetables and green food, lawn cuttings, etc., and leaving out the grain and meat ration.

After you have had your birds on this ration for about three weeks you will find that they have lost much flesh and are very thin. Then you should feed a rich, nitrogenous ration, either a good molting food or one consisting of beef scraps, corn, wheat and before they are ready for market. The best money makers are the birds that feather quickly and are quickly ready for market. A medium sized male with large hens will give an earlier maturing, better shaped bird than an overgrown male with small hens. To keep hens up to the standard weights it is necessary to breed from females rather over the standard weight.—Wallace's Farmer.

If the chickens seem sluggish, disinclined to eat, drink or move, examine the droppings for worms. Thirty drops of turpentine, or half a teaspoonful, to a pint of water, kept before the birds for a week in place of the regular drinking water, will cure ordinary cases. A tonic in the shape of onions, or any good poultry tonic, will tone up the birds. Clean and burn the droppings or plow them under.

Do not allow the young chickens to

THANKSGIVING.

Thanksgiving! Thanksgiving! November is here,
The beautiful crown of the wonderful year!
Like doves to the windows from East and from West,
The children come back to the cozy old nest.

Thanksgiving! Thanksgiving! the old folks at home
Are so glad by the fireside to see them all come
Though the forties and fifties are silvering their hair,
They are boys yet and girls to the good people there.

Thanksgiving! Thanksgiving! sit down by the fire,
Talk over old times with the happy old sire;
Tell the mother, whose hair is like new-fallen snow,
That you love her no less than in days long ago.

Oh, the home—the old home! The new may be sweet,
But not like the old to the world weary feet;
Be it long ere the hearth-light shall fade from its walls,
And the cheerful old love-light go out in its halls.

Imperial Valley Turkeys.

eats, with a little linseed meal, alwaysbe crowded. Remember that they have giving plenty of fresh water and good harp grit.

Birds treated this way and kept free rom lice will come through and molt etter and will begin to lay earlier and e in better condition than those that re left to drag through the molt.

BUYING A BIRD.

The purcahse of a male for a flock f mixed chickens is not a matter of nportance to the farmer; if he can et what he wants by "swapping," so nuch the better, but when the owner f a flock of pure bred fancy chickens ishes to buy a male he begins by ooking up his breeding. What he is kely to breed, what his faults are, is e the only one of quality in the breedr's yards, the chance result of a nance mating, or is the strain from hich he comes prepotent in the line e buyer needs to strengthen, are imortant questions. Take time in buyg a breeding bird by mail, ask all e questions you wish, tell wherein our birds are lacking. The farmer is eginning to pay good prices for birds, nd he should get good quality for his oney.—Wallace's Farmer.

Don't keep leggy, over sized cockels for breeders next year. Such rds are slow in maturing, slow in athering, and cost too much for food grown considerably since you gave them their first hovering and roosting places. Spread them out a little and give them plenty of room to grow.

Often the seeds for sickness are sown by allowing the young stock to be overcrowded and overheated at night. If they are too warm during the night they will take cold some cool morning when they come out early.

Ducks, geese and guineas are as good as a watch dog to give an alarm of approaching strangers. They are more profitable, too, because the food they consume is converted into salable products.

TABLES TURNED.

Alfred had so often been asked by admiring strangers "Whose little boy are you?" that it was perhaps no wonder that he finally turned the tables on his elders. This he did one evening by inquiring, very sweetly, of a young gentleman who was calling upon Alfred's sister, "Whose papa are you?"—Harper's Weekly.

BAD CASE.

"Why do you borrow trouble?"

"Don't you know?"

"Looks foolish to me."

"It is because I can't borrow money."

AFTER THANKSGIVING.

"What did you do on Thanksgiving?"

"Oh! I had a glorious time! I was helped three times to turkey."

"So was I."

"And twice to ice cream, and I had a quarter of a mince pie, and a lot of custard."

"I had pumpkin pie, and custard pie, and mince and apple turnovers. Then I had nuts and raisins—"

"So did I."

"And candy."

"So did I."

"And next day I had the doctor."

"So did I!"

IT'S COME TO THIS.

Mrs. Corntossel (reading letter)—"I declare, Jabez, I call this downright cruel."

Farmer Corntossel—"What's the matter?"

Mrs. Corntossel—"Why, here's a letter from Amelia tellin' me she gets help in raisin' her children from a Mother's Club. I do believe in a slipper sometimes, an' a good birchin' don't do a child no harm, but I never used no club on my children."

Lee's Egg Maker

Are your hens laying *now?* If not, are you doing your part in furnishing proper feed. Protein—*digestible* protein—is the feeding secret. It's a simple matter to get food rich in protein, but the percentage of it that is *digestible* is the thing to consider. Lee's Egg Maker is almost a pure meat product, clean, sweet, and wholesome, and contains more protein in *digestible* form than any other meat product. Successfully replaces all other kinds of meat food at *less* feeding cost and better results. That's our *guarantee.*

Prices 25c to $7.00, according to size.

GERMOZONE

is the best health-insurance you can furnish your fowls. Indispensable as a remedy for *Roup, Colds, Chicken-Pox,* and other poultry ailments. Disease in your flock now will probably mean diseased birds all winter and poor breeders in the spring. Germozone twice-a-week tones and builds up the system, destroys disease germs, insures better and healthier stock *now* and strong, vigorous birds for the breeding season. Best guarantee *against* disease; surest remedy if disease has already taken hold. *Either tablet or liquid. Price 50c.*

Lee's goods are on sale in almost *every* town, but if yours is an exception send your order direct to us and ask for our *free* offer.

GEO. H. LEE CO.,
225 W. 2d St., Los Angeles, Cal.

Send for your *free* copy of Lee's New Poultry Book. Interesting; instructive. The "best yet."

HICKS' JUBILEE HATCHERY

Asks you to place **Your Order** for Baby Chicks **With Them**

White Leghorns,
B. Rocks, R. I. Reds,
Buff Orpingtons

Not One Dissatisfied Customer Yet

One lady said: "The finest chicks I ever saw."
Another customer said: "Only lost 6 out of 500."
Still another: "Hicks sure can hatch fine chicks."

Capacity $12,000

It's a secret to hatch right and Hicks knows the secret.

W. J. HICKS
Route 2, bx. 154 PETALUMA, CAL.

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BIG MONEY IN FURS

Over ten million dollars will be paid to trappers of fur bearing animals during the coming winter. Any man or boy living in the country can add a goodly sum to his earnings by trapping during spare moments. We furnish ABSOLUTELY FREE a complete Trapper's Guide which tells you the size of trap and kind of bait to use for the different animals, how to remove the skins and prepare them for market. We also furnish the best traps and baits at lowest prices. We receive more furs direct from trapping grounds than any other house in the world, therefore can pay the highest prices for them. Our price lists, shipping tags, etc., are also FREE for the asking. If you are a trapper or want to become one, write to us today. We will help you.

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GREATEST FUR HOUSE IN THE WORLD
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Place Your Order for
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WITH
The White Hatchery
Capacity 50,000 J. L. White, Prop.
We Hatch All Principal Breeds
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In this department we will insert your advertisement under a classified head for 1½ cents per word per issue. No ad accepted for less than 25 cents. Our classified columns are the clearing house for our many thousand readers.

LIVE STOCK

POLAND CHINAS.
REAL BIG, SMOOTH TYPE.

Sows and gilts bred to "Greenbacks," the great Ohio boar. Gilts sired by "Greenbacks" old enough to breed. Gilts sired by "Meddler Keep," the great Missouri boar, who was sired by "Master Meddler," said to be the greatest Poland China boar living. Serviceable young boars sired by "Greenbacks" and "Meddler Keep," and whose dams, "My Peerless Illinois Sows," are among the cream of the breed. Prices very reasonable.

GEO. A. SMITH, Corcoran, Cal.

We have now five choice young registered Holstein bulls for sale. Handsome fellows. Stock of our breeding won at the fairs all over the state. Juliana De Kol was champion at Sacramento. Most of these bulls are either sired by her brother or are out of her sisters. M. E. Sherman, Minnewawa Stock Farm, Fresno, Cal.

Grapewild Farm Herd of thoroughbred Berkshires. State fair prize winners. Boars and sows of all ages, unrelated. Address A. B. Humphrey, Mayhews, Sacramento Co., Cal.

Three Half Bred Toggenburg Swiss Milk Does, sired by "Bismarck,' also one three-quarter bred doe kid, 6 months old. Price $20 each, or $75 for all. Full description on application to W. E. Hyer, Hemet, Cal.

For Sale—Ten head Shorthorn bulls and Berkshire hogs from best strains in America. I won silver cup for best herd at California State Fair, 1911. H. L. Murphy, Perkins, Cal.

Three Holstein Friesian Bulls, splendid young animals, for sale. Well marked and subject to registry. Write at once to Geo. C. Roeding, Fresno, Cal.

Belgian Hares—Fine, healthy breeding stock, for sale cheap. Write for your wants and prices. J. A. Reinhart, Hollister, Cal.

Pure Toggenburg Buck, a bargain. H. W. Shepard, Paradise Valley, National City, Cal.

Berkshire Pigs, all ages and both sexes, for sale. B. de Groot, Aptos, Cal.

WANTED

Local Representative Wanted—Splendid income assured right man to act as our representative after learning our business thoroughly by mail. Former experience unnecessary. All we require is honesty, ability, ambition and willingness to learn a lucrative business. No soliciting or traveling. This is an exceptional opportunity for a man in your section to get into a big paying business without capital and become independent for life. Write at once for full particulars. Address E. R. Marden, Pres. The National Co-Operative Real Estate Company, L 448, Marden Building, Washington, D. C.

Wanted—By capable young man, position as manager or foreman on fruit ranch. Box 61, Aptos, Cal.

Wanted—1000 Royal apricot trees, 4 to 5 feet on peach roots. Address H. L. Bauer Nursery, 737 S. Spring St., Los Angeles.

TREES

Leonard Coates Nursery Company, Morganhill, California. Introducers of the San Jose Mayette and Concord Walnuts. Trees propagated exclusively from original bearing trees. General Nursery Stock of Fruit and Ornamental Trees, Roses, etc. Send for our catalogue with information on "Pedigreed Fruit Trees." Samples of Walnuts sent on request.

Grafted Walnuts on Cal. Black Root—Franquette, Mayette, Concord, Placentia Perfection, San Jose Mayette, fine stock, true to name. Also Bartlett Pear, Imperial Prune, Apricot, and a complete line of other stock. Santa Clara Valley Nurseries, Gilroy, Cal.

For Sale—Apples; 3000 fine, standard, 5 to 6 ft. trees. Winter Banana Apple trees, the hardiest tree and the finest apple on the market; price right for quick sale. Address H. L. Bauer Nursery, 737 S. Spring St., Los Angeles.

Send for our wholesale price list; just out.
ENTERPRISE NURSERY,
Pasadena, Cal.
R. F. D. 2, Box 128A.

Fine Line of Navels, Valencias and Eureka Lemons for delivery spring of 1911. Contract now and get the first choice. The King Citrus Nurseries, Whittier, Cal.

Inspect our strictly high grade lemon and orange trees for 1912 delivery. Robinson Citrus Nurseries, San Dimas P. O., Cal. Take P. E. San Dimas car to Valley Center, 3½ blocks north.

100 PER CENT PROFIT IN 6 MONTHS. For Sale—Citrus nursery of 1500 orange and lemon buds, yearlings now. Care for them till spring. Address P. O. Box 1597, Los Angeles, Cal.

Orange, Lemon and Grapefruit Trees, all first class stock. Special prices to parties planting groves. Edward A. Carvel, 1454 Oak St., Glendale, Cal.

For Sale—Orange and lemon trees for spring planting. Would exchange a limited number for a good cow or hens. A. H. Dugdale, Etiwanda, Cal.

For First Class Valencia and Navel Orange Trees and Eureka Lemons, see A. G. Snow, Oxnard, Cal.

Low Prices on advance orders of deciduous fruit trees. Ballou's Nursery, Pasadena, Cal.

Agricultural Implements—Vehicles

For Sale—Agricultural implements, vehicles. Splendid values, lowest prices, liberal credit. See us without fail before buying. Catalogs mailed out of town customers. Write us describing what you wish to buy. When in the city a personal call will show the largest stock and assortment in the Southwest. Arnott & Company. Established 1892. 112-118 South Los Angeles Street, Los Angeles.

RARE PLANTS

Wild Plant Improvement Gardens, Santa Ana, California. Newton B. Pierce, proprietor. Rare choice ornamentals and new fruits from all lands.

For Sale—Fine large spineless cactus plants, now ready for planting. Price 50c each. Cooper & Vierra, Yuma, Ariz.

FARM LANDS FOR SALE.

For Sale—

A FINE COUNTRY HOME.

75 acres—20 acres alfalfa land, some alfalfa planted, all under cultivation. Good six-room house, big barn, 24x50, with stable full length on each side; windmill and tank. Water piped to house and barn and chicken corrals. Lots of shade and flowers; 8 acres vineyard; picked 24 tons grapes this season. Large well and gas engine for irrigation, 5 H.P. This alone is worth the price asked, but the owner will for a short time throw in 4 work horses and harness, 2 cows, 1 heifer, 250 chickens, 1 heavy wagon, 1 light wagon, 1 covered buggy, plows, harrows, and, in fact, all farming tools. Hay enough to carry stock through till harvest; 25 bushels corn and 25 bushels wheat, and other things too numerous to mention. Family orchard on the place. Only $8000; ½ cash, balance to suit. This is an income from the start. F. J. Conrad, The Hustler, Escondido.

For Sale—LINDSAY ORANGE LANDS.

Eleven days before Christmas the fourteen packing houses of Lindsay sent out pay checks for the 1910 navel orange crop. Lindsay orange district had the holiday orange market all to themselves, and of course they sold at good profit.

Why not invest in some of this Lindsay orange land and get the benefit of rapidly advancing prices?

Ten-acre tracts in Lindsay, $150 per acre, on easy terms.

Choice Tulare alfalfa lands, water in abundance; any size tracts, $50 per acre up.

KIOUS-WHANN REALTY CO.,
235 Mason Bldg., Los Angeles. A4164.

For Sale—700 acres land, 42 miles of Los Angeles. Plenty of good well water for domestic use; some running water on the land, and I believe plenty of water can be obtained to irrigate all of the tillable land, about 500 acres; about 200 acres fenced. I will take $35 per acre, one-third cash. I have 29 cows and heifers and 48 other young cattle, including calves. I will sell a pick of 20 out of the 29 cows for $50 per head, or I will sell the 77 for an even $2000. I have other personal property, viz.: Bees, mules, pigs, chickens, and farm implements. J. E. Youngblood, Lang, Cal.

$17.00 Per Acre—880 Acres. 880 acres A-1 citrus, grain or stock ranch, 8 miles south of Escondido, in line of new electric road now building; ½ mile from boulevard. Five-room house, barn, sheds, etc.; good well. Creek runs through place; 700 acres can be cultivated. This ranch is just across the road from land selling at $75 to $150 per acre. This is a bargain. Charles Soults, Escondido, San Diego County, California.

170 Acres—¼ mile from R.R. station and school, $30 per acre. 100 acres in crop; more can be planted to trees or vines. Partly warm citrus soil or for winter gardening; some alfalfa land; well 50 feet deep, 10 feet across, water 8 feet from surface; all under fence; no other improvements. Terms $3000 cash, balance at 7 per cent; will not trade. Address C. T. Haney, Escondido, Cal.

For Sale—3-acre chicken ranch in city limits of Paso Robles, banking and railroad town; good 5-room cottage, barn, incubator, brooder and all kinds of chicken fixtures, well, mill and tank; fenced. Land level, good soil; 15 minutes' walk to business center; price $3000; easy terms if desired. W. L. Carter, owner, 432 Byrne Bldg., Los Angeles.

Choice Orange Land, Exeter District—63 acres, 3 miles south of the town of Exeter, California, three-quarters of a mile from Southern Pacific railroad station, right in the foothills, leveled, water developed on it. Write for particulars. The Phalanx Company, 513 Chamber of Commerce, Los Angeles, Cal.

For Sale—

THE ORANGE GROVE MAN.

Large list of orange groves in best districts. Seven years' experience in growing oranges.

A. W. RICHARDS,
THE ORANGE GROVE MAN,
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For Sale—Near Lancaster, Cal. Bargains in improved and unimproved land. Also relinquishments for sale or trade. Some homestead land. A. S. Burnham, Box 451, Lancaster, Cal.

Apple Orchards—Large and small, in the only apple producing section in California. The greatest section west of Missouri River. Write for booklet. Geo. W. Sill & Co., Watsonville, Cal.

For bargains in orange orchards in the famous early orchard districts at Globe, address E. A. Miller, Manager Globe Realty Co., Globe, Cal.

For Sale—5-acre tracts, with water. Ten years' time. Famous Coachella Valley. Earliest fruit and truck land in the United States. J. Wm. Wilson, Indio, Cal.

San Diego County! My splendid weekly newspaper will tell you about this great county and superior climate. 16 weeks for 15c. H. P. Rising, publisher, Escondido, Cal.

San Joaquin Valley, cheapest fruit and alfalfa land in California. Buy from owner, no agent. L. G. Dawson, Tipton, Cal.

For Sale—A-No.-1 alfalfa lands, situated in the San Joaquin Valley. Cheap water. For particulars see C. Menefee, 413½ S. Hill St., Los Angeles.

ORNAMENTAL PLANTS

For Sale—Extra fine stock of Strawberry Guava. We have them by the 100 or by the 1000, potted or in flats. Also Loquats, Palms, Roses and a full line of Ornamental stock. Orange County Ornamental Nursery, Fullerton, Cal.

Plants of all kinds, wholesale and retail, at Las Palmas Greenhouses, Palo Alto, Cal. Contracts solicited. Let us know your needs at once.

DUCKS

We have a few genuine "Rankin" strain Mammoth Pekin drakes to spare that will add a pound each to your next lot of ducks. Grand big fellows, fit to show. Price two to five dollars each. Eggs from our best pens, $10 per hundred, $2 setting. Long Beach Poultry Ranch, Long Beach, Cal.

FARM LANDS WANTED.

Cash for Your Property, any kind, anywhere. If you want to buy, sell or exchange, address Northwestern Business Agency, Minneapolis, Minn.

MACHINERY

For Sale—Second-hand windmills, tanks, pumps, engines, farm machinery.

OUR SPECIALTY—NO WORRY.
MATERIAL GUARANTEED.
WINDMILL OUTFITS.

8 ft. steel aermotor, fine steel tower, tank, galvanized pipe, pump complete, $55; nearly new 10 ft. aermotor, tower, 5000-gal. tank, 22 ft. tank stand, 2-inch galvanized pipe, pump complete, $75; also smaller outfits, $39 and up.

ENGINES.

Another 1½ H.P. Fairbanks, $55; 2 H.P. Fairbanks, brand new, $69; 2½ H.P. Lambert, $69; 5 H.P. Holly; 6 H.P. Fairbanks; 26 H.P. Foos, $390; 10 H.P. steam engine, $45; 2 H.P. steam engine and boiler, 8 H.P. boiler.

PUMPS.

No. 2 Byron Jackson centrifugal pump, $25; large size Bulldozer jack, $55; double acting Ames pump, complete with casing, rods and cylinder, at 1-3 new price; also triplex and duplex pumps, cistern, hand and windmill force pumps.

TANKS.

We have just got in another bunch of wood tanks, some brand new; can give you almost any size you want. Save you half and guarantee them.

FARM MACHINERY.

Walking and riding plows, Fresno, slip and wheel scrapers, spike tooth, spring tooth and disc harrows, mowers, two-horse tree sprayer, Delaval cream separator, dry washer, seed sower, fruit crusher.

PIPE SPECIALS.

200 ft. 10-in. line pipe, fine for under ground, $16 takes the lot.

WAGONS, BUGGIES, HARNESS.

Outside shipments receive personal attention. Prices very lowest good, serviceable material can be furnished for. Get others' prices, then compare material and prices with us.

DEMMITT CO., 120 N. Main, Los Angeles.

For Sale—New and second-hand, guaranteed in good working condition, gas and steam engines, pumps and pumping plants complete. Baillie & Brandt Co., 943 N. Main St., Los Angeles, Cal.

For Sale—Second-hand motors, all sizes. Guaranteed to be in good working condition. Baillie & Brandt Co., 943 N. Main St., Los Angeles, Cal.

For Sale—New Alamo 9 H.P. portable gas engine, mounted on steel running gear with tanks, etc., ready to run. Baillie & Brandt Co., 943 N. Main St., Los Angeles, Cal.

Write to us for what you want in machinery or pumping plants. We can fit you out for less money. Baillie & Brandt Co., 943 N. Main St., Los Angeles, Cal.

For Sale Cheap—Gasoline engine with tree spraying outfits. In first-class condition. Jordan Oil Co., Los Angeles, Cal.

MISCELLANEOUS

Free—"Investing for Profit" Magazine. Send me your name and I will mail you this magazine absolutely free. Before you invest a dollar anywhere, get this magazine—it is worth $10 a copy to any man who intends to invest $5 or more per month. Tells how $1,000 can grow to $22,000; how to judge different classes of investments; the real power of your money. This magazine for six months free if you write today. H. L. Barber, Publisher, R. 430, 28 W. Jackson Boulevard, Chicago, Ill.

For Sale—All sizes; second-hand; screw pipe and casing from ½ inch to 13½ inch. We have this pipe in A-1 condition, ready for shipment and can give you any amount you want. Can save you big money on any kind of pipe you want to use. Don't fail to write or come and get our prices before you buy elsewhere. E. A. Clampitt, Los Angeles, Cal., cor. Lake Shore Ave. and Court St. Phones—M4863, Home 53022.

The Bell Agency. A general public service bureau, 833 Market St., San Francisco. Attends ot anything for anybody. Bank references. E. D. Dement, Mgr.

Lime and Gypsum for the Land—Lime for spraying. Best quality. H. B. Matthews, 733 Merchants Exchange, San Francisco, Cal.

Grower to Consumer—Raisins in 50-lb. boxes. Sultanas, 6½c; Muscatels, 3-cr. at 5c, 2-cr. at 4½c. A. H. Dugdale, Etiwanda, Cal.

TURKEYS

MAMMOTH GOLDEN BRONZE TURKEYS.

"International Tom," first prize and special prize turkey at the International Poultry Show, and said to be the largest turkey in the world, heads the flock. Young stock with large bone, long body, full breast, well marked and early maturing, for sale. Their mothers are from the leading prize-winning flocks of several Eastern states. I claim to own the best flock of turkeys on the Coast. Write soon, as orders are coming in fast. Prices very reasonable.

GEO. A. SMITH, Corcoran, Cal.

For Sale—Thoroughbred Mammoth Bronze turkey hens, from 18 to 20 months old; of large size and fine markings and the kind that lay early. Only $8 each or four for $30. Mrs. Nellie Hart, Holtville, Cal.

HORTICULTURAL PRINTING

Catalogues for the seed and nursery trade, the live stock and poultry industries, are a specialty with us. Two thousand illustrations to select from. Write for prices and samples. The Kruckeberg Press, 237 Trans-Bay St., Los Angeles.

SEEDS AND PLANTS

Free—20 per cent in fresh package seeds, to introduce our goods, on all orders amounting to $2, and not over $5. Prices, Apples, 12½c; Pears, 30c; Roses, 30c, first grade 4 to 6 ft. trees, No. 1 Roses. We pay the freight. Medford Nursery Co., Medford, Oregon.

Citrus—150,000 sweet and sour seed bed stock, first class in every particular. Also one and two-year Eureka lemon, Washington Navel and Valencia nursery stock. C. W. Wilhite, Glendora, Cal. Home phone 2062.

Berry Plants and other good things for the garden and farm. My new catalogue is just out; send for it now. Louis F. Scribner, Pasadena, Cal.

California Black Walnuts for Seed—From the finest trees in state; large or small lots. Santa Clara Valley Nurseries, Gilroy, Cal.

POULTRY

How to Make Money—Mrs. A. Basley's Latest Poultry Book is without exception the most wonderfully complete manual on the subject of successful poultry management ever written. The secret of how to raise every turkey hatched and the "Basley Formulas," now published for the first time, are worth many times the price of the book The "Western Poultry Book" is a practical book by a practical woman. Price $1. Address Mrs. A. Basley, Garfield Place, Hollywood, Cal.

Fifth Year—Kellerstrass Crystal-Byers Pearl White Orpingtons. Marvels in beauty and egg production. Big, blocky and white. Exceptional value. Eggs $3 and $5 per 15; baby and thirty-day-old chicks, prices upon application. Buff Wyandottes, the "classiest" American breed, $1.50 per setting. Satisfaction guaranteed. Book orders now for future delivery. Circulars and photographs later; send for them. Frank Haasis, Ontario, Cal.

Just What You Want—S. C. Black Minorcas. Splendid Layers—Thoroughbred Stock. Eggs and Day-Old Chicks.
CHOICE WHITE HOLLAND TURKEYS.
A few extra fine young toms at reasonable prices. Eggs and young poults for sale after March 1st. Now is the time to order. Write wants. Mrs. W. D. Root, 735 Verdugo Road, Glendale. P. O. address, R. D. 1, Box 105, Los Angeles.

See Here. If you want some of the best stock in this world, we have it. All thoroughbred S. C. R. I. Reds, Black and White Minorcas, Crystal White and Black Orpingtons and Barred Rocks. Orders filled as catalogued. Baby chicks, hatching eggs, cockerels, and a few pens. Address, Monte Rio Poultry Yards, Newcastle, Cal.

The Goodacre strains—23 more ribbons and silver medal at Phoenix; seven firsts, Stockton, etc. Breeding stock for sale, a few chicks also. Buff Orpington, R. I. Reds, White Leghorns and Anconas. White Runner ducks. Goodacre Bros., Compton, Cal.

For Sale—Pullets, cockerels and yearling White Orpingtons (Cook strain), Black Minorcas (Northrup strain), White Minorcas, R. I. Reds (Tompkins strain), pure bred. C. U. Chamberlin, Los Gatos, Cal.

Day-Old Chicks, Barred Rock and White Leghorns, good laying strain. Order now to insure early fall delivery. The Fairmount Hatchery, 29 B Rural No. 1, Santa Cruz, Cal.

Poultry Wanted—We pay the highest market price for all the local poultry we can get, no matetr how large the quantity; also fresh ranch eggs. We remit immediately. Allaway & Layton Co., 607 E. Third St., Los Angeles, Cal.

Orpingtons—High class Buff and White Bred to lay from prize winning stock. 500 pullets and cockerels for sale. Reasonable prices. Will mate pens with unrelated males. Write Mrs. S. Swaysgood, Route 1, Healdsburg, Cal.

"Chicks well hatched are half raised." White and Brown Leghorn chicks from healthy, vigorous breeding stock. San Jose Hatchery, Henry Langenschwadt, San Jose, Cal.

A 45c Money Order (no stamps) brings full instructions for a cheap roost and dropping board that settles the mite question for good. John S. Siebert, 1036 Second St., San Diego, Cal.

Just Hatched White Leghorn Chicks every month, from select, heavy laying, mature stock. No pullet eggs used. Lodi Hatchery, E. Elm St., Lodi, Cal.

White Leghorns—Buff Orpingtons. Bred for beauty and great egg production. Grand lot of both old and young stock for sale. Prices reasonable. Write your wants. Model Poultry Farm, Box H, Irvington, Cal.

Very fine strain Barred Rock cockerels. Now booking orders for baby chicks and eggs; also S. C. R. I. Reds, headed by my $50.00 male to special high-class females. R. B. Sherman, Newcastle, Cal.

Western Hatchery—We are booking orders for day old chicks hatched from well selected, well bred stock. Write for prices and terms. Western Hatchery, Western Ave., Petaluma, Cal.

Schellville Hatchery. Thoroughbred White Leghorn chicks, hatched from heavy winter layers. The kind that pay. No dead or weak chicks charged for. Order early. Box R 72, Sonoma, Cal.

True Blue Andalusians, trios and cockerels, the finest you ever saw, from imported stock. Improve your flock with new blood. J. R. Huddleston, 343 Edgeware Road, Los Angeles.

Handsome pure bred Barred Rock cockerels, 8 months old. Very cheap considering quality. $2 each or three for $5. Mrs. Nellie Hart, Holtville, Cal.

For Sale—Barred Plymouth Rocks, cockerels. Eggs $5 and $8 per one hundred. Miss A. Loosemore, Campbell, Cal.

Barred Plymouth Rocks (Hawkins Royal Blue Strain). Cockerels, day-old chicks and eggs for hatching. Enoch Crews, R. No. 1, Santa Cruz, Cal.

For Sale—Light Brahmas, fine stock. Also booking orders for eggs in season, $1.50 for 15. H. Koopman, Downey, Cal., Ranch 1000 feet southwest of S. P. depot.

Ring-Necked China Pheasants for sale. Pairs or breeding pen of four; also eggs for hatching during the spring season. Address T. D. Morris, Agua Caliente, Cal.

Barred Rocks Exclusively—Some fine cockerels for sale. Now booking orders for hatched chicks. Eggs for sale. Write for prices. G. L. Hawley, Madera, Cal.

The Luedkes—Incomparable R. I. Red high record layers. Eggs by the hundred $6.00. Fancy matings $3.00 for 15. P. O., Anaheim, Route 1.

Rose and Single Comb R. I. Red cocks and cockerels from the best strains for sale at bargain prices if sold at once. Need the room. Write for prices. W. H. Pickering, 934 E. 55th St., Los Angeles.

For Sale—Thoroughbred Buff Orpington cockerels. Mrs. H. E. Whipple, 3723 Maple Ave., Los Angeles. Phone 29187.

Rose Comb Black Minorcas, nine years line bred. Stock and eggs in season. Eleanore Minorca Farm, R. D. 1, Los Angeles, Cal.

Barred Plymouth Rocks—The kind that "win and lay." Eggs and stock for sale. C. H. Vodden, Los Gatos, Cal.

For Sale—Howard strain fine White Leghorn roosters, $2.50 each. S. W. Johnson, Corcoran, Cal., Box 73.

Kellerstrass Crystal White Orpington Eggs, $2 per 13. R. L. Warren, National City, Cal. R. D. 1.

FOR RENT

Imperial Valley Fruit Ranch to Let—160 acres in early table grapes, apricots, alfalfa and cotton; 2 miles from county seat. Tenant must have experience, and $3,000 capital to furnish labor. Address Horticultural Dept., 205 Grant Building, Los Angeles, Cal.

For Rent—1440 acres on railroad, Fresno County, near station, fifty cents acre for term years. Very cheap water. Same land for sale cheap. A. M. Valentine, Long Beach, Cal. Home 5872.

To Let—Ranch, 40 to 60 acres, fruit, vegetable and hay land, good buildings, fine water, close to electric car line. L. B. Taylor, Stough Farms, Burbank, Cal.

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Have You a Cow?—Have you a creamery? Have you a cheese factory? Write us. Everything used in either a dairy, creamery, cheese factory, or for handling milk, cream, butter or cheese. We are in a position to quote you prices on entire creamery or cheese-making outfits. We make a specialty of only the latest and best sanitary machinery and supplies. Send us a list of what you want, and we will quote prices which we feel certain will interest you. O. H. Weber Co., 225-227 East Sixth St., Los Angeles, Cal.

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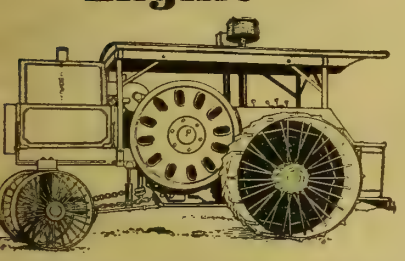

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The supply of ***good*** trees is very, very short.

Some varieties sold out.

Our assortment of the best standard sorts in

Apple,
Plum,
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is still complete. Catalog and price list mailed on request.

Write us at once.

TREES TRUE TO NAME. The SILVA-BERGTHOLDT CO. NEWCASTLE, CALIF. PLACER NURSERIES

A LETTER FROM GREECE.

Mr. Fred Hammer, Southern California ent of the Frost Prevention Company, an interesting proof of the worth of tivator advertising. It is a postcard m M. Triantaphllidis, Athens, Greece, ing for catalogue and information as possibilities of frost prevention by the of his oil pots. The Cultivator's long is often successful in reaching far- y people for its advertisers, and here- re we have been shown proof of its ching power in Southern Africa, in an, in England and Australia. he Frost Prevention people report an ellent season; many who formerly did believe in oil pot protection, after ng tests, have placed orders for thou- ds of pots.

A PERTINENT INQUIRY BY ABRAHAM LINCOLN.

In 1858 we heard Abraham Lincoln deliver an address at the Wisconsin State Fair in Milwaukee. The address made a deep impression upon us at that time, but we now see that we failed to comprehend its deep and true import.

Lincoln was not a farmer, but his far-seeing mind reached out and grasped then the living issue of today, the issue that is crowding itself upon farmers everywhere. Read the following extract from that address and note how Lincoln's mind grasped the true essence of economic farming:

"Unquestionably it will take more labor to produce fifty bushels of wheat from an acre than to produce ten bushels from that same acre; but will it take more labor to produce fifty bushels of wheat from one acre than five? Unquestionably thorough cultivation will require more labor to the acre, but will it require more to the bushel?"

That was a center shot; it went straight to the very core of the whole farming question. Right there lies the dividing line between the old, wasteful methods of land destruction, going on yet, and the reform in ideas and practice that modern farming would bring about. Right in that brief inquiry by Abraham Lincoln, fifty-two years ago, lies the very essence of what the modern agricultural college, the modern farm paper and modern science are trying to get the farmers of this country to see.

Go back and read that great inquiry over. Let it saturate the thought and understanding. "Will it cost more to raise fifty bushels of wheat on one acre than on five?"

Will it cost more to produce 18,000 lbs. of milk from three cows than from six?

Because the past generation of farmers of this country have been blind to this great economic truth, have they destroyed the fertility of their soil, and gone to their graves "unhonored and unsung." The demon of waste, that would rather grow fifty bushels of wheat on five acres than on one, because it could be done with less outlay of brain, wouldn't take so much thinking. This malign spirit has been the presiding genius of American farming until within the last twenty years. We may say Lincoln saw this huge spectre of folly more than half a century ago. And yet there are thousands of farmers who can not see it today. They are still worshipping at the shrine of this moloch of waste and destruction.—Hoard's Dairyman.

U. S. ARMY TESTS MOTORCYCLE.

From Madison Barracks, New York, comes the information that Uncle Sam is to make a coast-to-coast test of motor cycles under the direction of the war deparment. Other countries are making use of the motorcycle in their armies, and in this country the militia in several states has already used these machines successfully for scouts and dispatch bearers—where swift and sure communication is necessary.

The army test will take a motorcycle squad from New York to San Francisco, via St. Louis, Oklahoma City and El Paso.

Young trees will grow later in the fall than the older ones, and the sap run should be checked early.

Exeter, Tulare County, shipped four cars of oranges to Australia last week.

Lettuce, to be at its best, should be grown as rapidly as possible; hence

Save Money

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DOW PUMP

Moderate in first cost, repair cost practically nothing, power required materially less than in any other type, and good for years of work, where can you get a better bargain?

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Every prospective planter should have a copy of

"California Horticulture The Fruit Growers Guide"

which describes 2000 varieties of trees and plants, contains 120 pages—beautifully illustrated in colors—and gives much valuable information to planters and growers. Price, 25 cents postpaid.

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The Talbert Celery Growers Association began shipping last week.

AUCTION

THE BIG SALE OF THE YEAR.

400 Fine Dairy Cows and Horses.

The property of the Bonnie Brae Dairy, near corner of South Park and Manchester Avenues, Los Angeles.

Tuesday and Wednesday,
Nov. 28th and 29th, 9 A. M. Sharp.

200 Fine Dairy Cows—Mostly large, fine Holsteins, many fine Durhams and Jerseys, many now fresh and giving large quantities of milk; others coming in soon; nearly all young and in fine condition—in fact, one of the best dairy herds in Southern California. Many cows in this herd will milk from 50 to 65 lbs. of weighted milk when fresh.

150 Fine Heifers—Mostly Holsteins, a few choice Durhams and Jerseys, from 6 months to 2 years old. 5 fine young Holstein bulls, 1 young thoroughbred Jersey bull.

40 Head All-Purpose Horses and Mares—Weight from 1000 to 1200 lbs. each, 4 to 7 years old, good drivers, delivery and all-purpose stock.

10 Head Mules—Weight 900 to 1000 lbs. each, all young, all-purpose stock; 1 fine Shetland pony, harness and buggy; 1 fine 4-year-old trotting-bred stallion, weight about 1000 lbs.; very fine individual.

$3000 Milk Route and Implements. All stanchions, 3 bunk houses, milk house, Milk wagon, separators, aerator, cans, tools, etc. 500 ton ensilage in silos.

Everything must be sold, regardless of price.

The cows and all the young stock that can be sold will be offered the first day. Horses, implements and any remaining cows and heifers will be sold second day. If you are a dairyman, don't miss the sale of the year. We do not know of any other such herd in California. You are requested to visit the ranch prior to sale and see this stock milked daily at 2 p. m. Remember, sale starts at 9 a. m. each day. Arrange to be there on both days.

Mr. Litland will soon leave for Europe, is quitting the dairy business, and has instructed us to dispose of this magnificent dairy herd on above dates, without reserve.

Take Redondo-Moneta cars to Manchester Ave., walk 2 blocks east, or take 61st St. city cars to South Park Ave., walk south to dairy, or take Watts Local cars to Graham Station, walk west to dairy.

You are invited to attend this sale and partake of the old-fashioned free Spanish barbecue.

TERMS: On cows, $100 and under, cash; over $100, eight months' time, with note and approved security and 8% interest. Liberal discount for cash. Horses sell for cash.

BONNIE BRAE DAIRY, Owners.

RHOADES & RHOADES
830 South Main St. Los Angeles
AUCTIONEERS.
Phones: Main 1259, F1259.

Auction Sale

65 DRAFT HORSES,

Mares, Colts, Mules, Implements, Etc.

On the I. M. Von Schriltz Ranch, Five Miles Southwest of

SANTA ANA.

On the Santa Ana-Huntington Beach Electric Line. Take Santa Ana or Huntington Beach cars to Von Schriltz Station on ranch,

MONDAY, NOVEMBER 27TH,
9 A. M. Sharp.

Having leased the 1000-acre ranch for a term of five years to the Southern California Sugar Co., the owner has instructed us to dispose of all his live stock, implements, etc., consisting in part of:

45 Head Draft Horses and Mares,

weight from 1400 to 1700 pounds each, 5 to 7 years old; many well-matched spans, mares all bred to Clyde Stallion; nearly all sound; several spans of good leaders, in fact, an exceptional lot of heavy work stock and mares.

6 head all-purpose horses, weight 1050 to 1300 pounds each; 7 head short 2-year-old draft fillies; 6 head spring colts, 4 work mules, weight about 1150 pounds each; 1 2-year-old mule colt.

Implements.

1 5-passenger Tourist automobile, fully equipped, new; gang-plows, walking plows, beet plows, cultivators, discs, harrows, cross-kills, rollers, mowers, rakes, Fresnoes, galvanized tank wagons, 25 sets harness, rubber-tired buggy, stretchers, 5-lb. chains, 14-H.P. portable gasoline engine, with No. 4 Byron pump; 10 farm wagons, 4 beet racks, flat racks, beet planters, potato planter and digger, corn planters, platform scales, oil tanks, seeders; in fact, all tools for 1000-acre ranch.

TERMS: $25.00 and under, cash; over $25.00, twelve months' time, with note and approved security and 8 per cent interest. 5 per cent discount for cash.

Free lunch at noon. Don't miss this genuine closing-out sale.

I. M. VON SCHRILTZ, Owner.

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Office 830-832 South Main St.,
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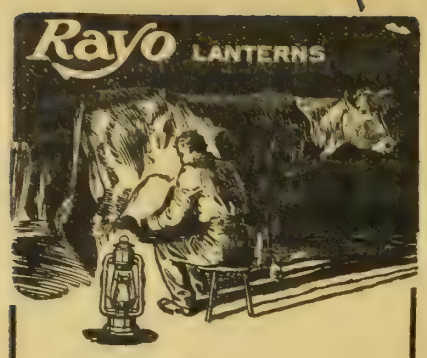

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All Rayo lanterns are equipped with selected Rayo globes, clear, red or green, as desired, and wicks are inserted in the burners, ready to light.

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A Friend to the Farmer

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Questions and Answers

THE EDITOR AND STAFF

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper, and sign full name and address. Unsigned communications receive no attention.

Freezing Fruit.

What is the usual minimum temperature in the vicinity of Riverside, and what is the minimum citrus fruits will stand without damage?—Subscriber, Orland.

We cannot give the minimum temperature at Riverside and if we could it would give but slight idea as to its desirability as location for citrus fruits. It must be borne in mind that minimum temperature is no sure criterion of adaptability to citrus growing. There are sections of Riverside in which one would not be justified in planting a citrus tree and there are others which offer practically perfect conditions. We have seen the temperature fall to as low as 22 degrees in a bearing orange grove. This was near midnight. A breeze started and the temperature rose and before morning the freezing point, or 32 degrees, was reached. There was no perceptible harm done to the fruit, but had the temperature remained at 22 degrees from midnight to morning and then the sun had come out bright, doubtless every orange the sun struck would have been ruined. Amount of moisture in the atmosphere, condition of the tree, as well as conditions above mentioned, must be considered in determining possible frost injury.

Galls on Willows.

A subscriber living in the Arroyo Seco of Los Angeles sends leaves from willow trees with little red galls, some of them as large as the half of a pea. These galls seem to be a natural part of the leaf, but when opened are found to contain larvae. They were sent to Prof. H. J. Quayle and he answers:

"The willow leaves which were sent in are infested with galls produced by saw flies. These saw-flies belong to the same large group of insects as the bees, ants and wasps. One genus which produces this characteristic sort of gall goes by the name of Pontania, and such galls as this are called Pontania galls. When you ask what causes the particular growth, you are propounding a difficult question which at the present time cannot be answered specifically. It is due to an abnormal or hypertrophied growth of the tissue, induced by the egg puncture or growth of the larva. Some think that this growth is due to a secretion and others to a physical irritation caused by the movement of the larva. There are numerous other kinds of galls produced by many different sorts of insects as well as mites and fungi. The adult of the particular insect in question, deposits its egg in the tender leaves of the willow in the early spring. The larva grows and matures within the gall and by this time has eaten out most of the interior, leaving it hollow and filled with grass. Growth is completed by fall, usually in September, the larva then going usually into decaying wood, sometimes in the ground, and occasionally remaining in the gall itself to transform to the pupa and finally to the adult. It remains, however, as a fullgrown larva throughout the winter, transforming to the pupa and then into the adult in March. If you desire the species name of this Pontania, I shall be glad to determine it for you if possible, upon the receipt of better material."

Stick-Tight Fleas.

Please inform me how to get rid of stick-tight fleas on chickens. They seem to be only around the head where there are no feathers. They stick around in bunches. I have to pull them to get them loose. The hens are laying, but probably will not long, with fleas on them.—Subscriber.

To get the fleas off the bodies of the hens the best thing I know is to get some corrosive sublimate dissolved in pure alcohol and carefully paint the spots where the fleas are, but this is a difficult thing to do carefully, as the corrosive sublimate is very poisonous and if it runs into the eyes will make the hen blind, so I would advise trying either salt and alcohol, or salt and vinegar and an old toothbrush, and brushing the fleas or putting a very little coal tar on the spots. The only way to get entirely rid of the fleas is to spray the houses and yards with salt and water, especially in the corners, to kill the young broods of fleas, or you can pour boiling hot soapsuds or limewash or hot salt and water in the corners and dusty places. The fleas will kill young fowls and will prevent the hens from laying.—Mrs. A. B.

Black Scale.

What is the proper time for fumigating black scale on orange trees? Am told that if it is done after the scale is "housed up" for the winter that it will not kill. Fumigators are busy in orchards now. Is it too late for the work or not?—Subscriber, Covina.

It depends much upon the season, but fumigators generally regard the season as from October through December. After January 1st the eggs under the old shell are very hard to reach.

Jerusalem Artichokes.

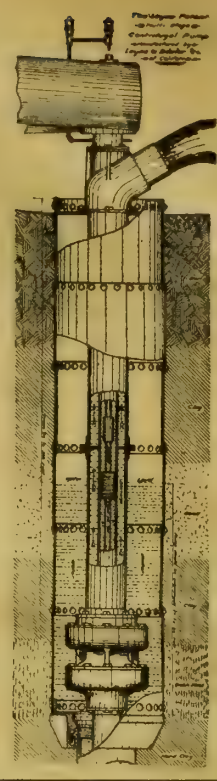
When is the proper time to plant Jerusalem artichokes, and how long does it take for them to mature?—J. L., Grub Gulch.

Prepare the ground and plant much the same as potatoes, having rows four feet apart with two or three feet between plants. If tubers are small, plant entire; if large, cut to two eyes. Put about four inches deep. Cannot give the exact length of time for ripening the crop, but spring planting has the product ready for early fall harvest.

Pyrethrum.

I notice in the issue of the Cultivator of September 21, Page 274, "Insecticide Ruling," you speak of a "certain species of chrysanthemum." It will be of interest if you will print the botanical name of that species with description so one could recognize the plant.—Subscriber, National City.

From Bailey's Cyclopedia of Horticulture we quote: "The insect powder known as 'pyrethrum' is produced from the dried flowers of C. cinerariaefolium and C. coccineum. The former species grows wild in Dalmatia, a long, narrow, mountainous tract of the Austrian empire. 'Dalmatian insect powder' is one of the commonest insecticides, especially for household pets. C. cinerariaefolium is largely cultivated in France. C. coccineum is cultivated in California, and the product is known as buhach." In addition, the follow-



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ing botanical description of C. coccineum is given: "Glabrous, ½ foot high, stem usually unbranched, rarely branched at the top; leaves thin, dark green, or in dried specimens dark brown; involucral scales with brown margin; rays white or red in such shades as pink, carmine, rose, lilac and crimson, and sometimes tipped with yellow, but never wholly yellow."

Balanced Ration.

Please give information as to balanced ration for brood sows, young sows and pigs two months old.—Subscriber, Earlimart.

We refer the inquirer to Mrs. Sherman's article in this issue.

Pigs per Acre.

Would like information regarding hog raising in Chino district. Have plenty of water, perfect stand of alfalfa. What are the conditions and how many brood sows per acre will this land carry? What breed is best for this locality and how long is it necessary to feed for market?—Subscriber, Chino.

The above and a number of other questions asked by the inquirer are answered in Mrs. Sherman's article in this week's issue.

Temperature for Valencias.

The theory that the Valencia will stand more frost than the Navel with less damage to fruit or tree has been advanced. Is there any record on this point?—E. W. M., El Cajon.

Dr. J. Eliot Coit answers: "At one time it was my opinion, based on observation, that the Valencia was more resistant to cold than the Navel, but of late I have come to believe that the difference, if any exists, is very slight and is hardly worth while to take into account in practical orchard plantings. It would be interesting for the Cultivator to call for testimony on this point."

Curling Citrus Leaves.

Leaves on Washington Navel trees planted this spring dry, then curl. Is it caused by hot winds or is there a disease of the citrus family which causes this?—Subscriber, Orland.

Dr. J. E. Coit answers: "There are two common causes for the curl of citrus leaves. One is aphids which attack the young growth early in the spring, affected leaves remaining cupped or curled up throughout their existence. The other cause is extreme heat coinciding with the lack of water. If a hot wind occurs just before irrigation many of the outside leaves will curl to such an extent that they will not entirely recover after the application of water. I know of no specific fungus disease which causes a curling of citrus leaves."

Remember that where there is no filth there will be no flies. Clean up your own premises. If you still have flies it is because your neighbors are harboring filth. If they won't clean up ask the board of health to force them to do so. That you are not safe from disease carried by flies unless your grocer, your butcher, your baker —everyone from whom you buy foodstuffs—is as careful as you are. See that your town has a food-screening ordinance, and that it is enforced.

WHY HE OBJECTS.

"We all have our share of trouble."

"You bet. But there is this about that I don't like."

"What is it?"

"Some of my friends think I ought to have theirs too."

NECESSARY.

"He has a lot of conceit."

"He needs it, don't you think?"

"Why?"

"To counterbalance what the rest of us think of him."

Veterinary

Answers in this column by Fred G. Matthews, M. S., D. V. M., 1232 Central Ave., Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Throat Swollen.

What manifestations may be expected when beards of foxtail or barley settle in the flesh of the throat of a cow? What are the symptoms following the bite of a poisonous snake or insect and how soon after cow is bitten may the milk be used. —Subscriber, Kerman.

The condition will vary with the extent and depth of the injury from beards. Slight injury to the lining membrane of the throat or mouth will be accompanied by a flow of saliva, sometimes containing pus and having a foul odor and soreness of the throat. Beards penetrating the muscular tissue result in a swelling which tends to abscess formation, erupting in the course of four or five days, the pus which escapes having an offensive odor. So long as beards remain in the tract pus will continue to flow but the swelling will subside.

Swelling is profuse and rapid after venomous bites, starting from the point of injury, the swelling rapidly spreads to involve an entire limb or the head and a portion of the neck within a few hours. Pain is intense and weakness progresses almost to complete prostration and death. A dark bloody fluid oozes from the small wound inflicted by the fangs of the snake, and the poisoned flesh may decay and slough away after a few days. Abscess formation is not to be expected. When all swelling has disappeared and wounds, if any, have healed, the milk will be fit for use.—F. G. M.

Garget.

A cow five years old which calved last December commenced to give bad milk October 24; delivered a calf prematurely October 28; passed the afterbirth and is now all right excepting a caked bag. I milked her three times a day and rubbed the bag with camphorated oil at each milking. I can get milk from three teats, but the other gives but a little hard curd and this teat seems to have a hard core in it. Can I save the udder?—Subscriber, Vorden.

It is questionable if the worst teat may be saved, though not impossible. Apply iodine petrogen freely twice daily and rub thoroughly. A pad of cloth heated and suspended in a manner to cover the udder, after treatment, would greatly facilitate the absorption of the drug. Iodine in this form does not blister.—F. G. M.

Nymphomania.

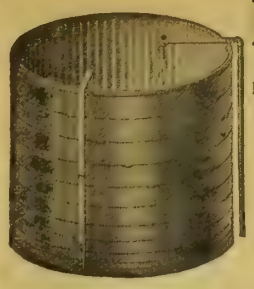
A heifer which has been milking for the past six months has been in heat continually for about one month, and a swelling has appeared over the kidneys. Can anything be done for her. —Subscriber, El Centro.

Disease of the ovaries is undoubtedly the cause of the trouble. Dissolve two ounces of potassium iodide in a pint of water and give the cow two tablespoonfuls (one fluid ounce) twice daily in water or in the feed. Skip a week and repeat.—F. G. M.

EXPLAINED.

Visitor: "Great Scott! Why are you throwing bottles at that poor man? Are you trying to kill him?"

Baseball Fan: "No; not the slightest intention of it. The league is launching a new umpire and we are just christening him!"



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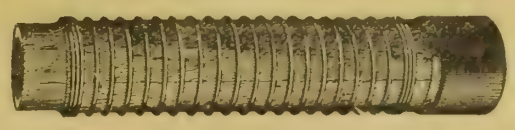

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READ YOUR METER.

A great many differences between patrons and electric light companies may be avoided if patrons will learn to read the meter, thus knowing just how much electricity they are using. If this is done the oft repeated statement, "I know I have not used as much light as I am charged for," will be heard less often.

Before an electric meter is placed upon the market by a manufacturing company, it is thoroughly adjusted, tested, and sealed against being opened by any one. In that condition it reaches a patron and may be depended upon as being correct.

A light company sells its power by the kilowatt hour, meaning 1000 watts per hour, hence the meter is made to record these amounts. (Occasionally a meter is graduated to read in watts; if so, the final reading divided by 1000 gives the kilowatt hours).

Being unable to use a cut of the meter it is necessary to give the following description. We will consider a four-dial meter reading to 10,000 kilowatt hours.

The dials over which the hands move are about the size of a 25-cent piece, each being divided into 10 equal spaces, the "0" at the top of the circle. Each dial is graduated in, and each hand moves in reverse direction to the one preceding; also, each hand moves 1-10 as fast as the one before. Call the dials 1, 2, 3 and 4, respectively, numbering from right to left. Suppose all the hands set at "0." When the hand of dial "1" has moved from "0" to "1," one kilowatt hour is recorded; when this hand has made one complete revolution the hand of dial "2" has moved from "0" to "1," recording 10 kilowatt hours; when the hand of dial "1" has made 10 revolutions that of dial "2" has made one revolution, and the hand of dial "3" has moved from "0" to "1," recording 100 kilowatt hours; when the hand of dial "1" has made 100 revolutions, that of dial "2" has made 10 revolutions, that of dial "3" has made one revolution and the hand of dial "4" has moved from "0" to "1," recording 1000 kilowatt hours; hence the dials read 1, 10, 100, 1000 kilowatt hours, respectively.

In taking the reading from the meter, read the number back of each hand, and always consider the reading of each of two consecutive hands for a final result. The necessity of taking two hands, as indicated, is that they may not be accurately placed upon the dial, hence an error may arise if the individual hands only are relied upon. If the hands are accurately placed the reading indicated by each can be used as final.

Suppose the hands upon the dials stand as follows: dial "1" at 3; dial "2" a little past 7; dial "3" a little past 5; dial "4" slightly over halfway between 2 and 3, then

Dial 4 reads	2	1000s or	2000 k. h
Dial 3 reads	5	100s or	500 k. h.
Dial 2 reads	7	10s or	70 k. h.
Dial 1 reads	3	1s or	3 k. h.
Meter reading			2573 k. h.

Record this result and, at the end of a week or month, read the meter again. Find the difference between any two readings and knowing the rate charged per kilowatt hour, you know the cost of your electric light any time you wish.—Fred G. Person, Colorado Agricultural College.

BULLETINS ON TREES.

The state agricultural experiment station has recently issued Bulletin No. 90, entitled "Forest, Shade and Ornamental Trees in Washington." This bulletin is a report of experiments which have been in progress for fifteen years, on the grounds of the State College at Pullman, to determine what varieties of trees, shrubs, etc., can be successfully grown on the treeless area of Eastern Washington. The results reported in the bulletin show that a much larger number of varieties of trees will make very satisfactory growth in these regions, if properly cared for, than was formerly thought possible. The methods of propagation, planting, and cultivation which have been found to give the best results are described in detail in the bulletin. A complete description of each variety of tree, or shrub, which has been tested, with comments on its hardiness, drought-resistance, and rapidity of growth, is also given. A brief summary of the most important recommendations concerning growing trees in this state, with recommended lists of varieties for planting in different parts of the state is presented in Popular Bulletin No. 23, "Trees in Washington." Copies of either of these bulletins may be had by writing to the Director of the Experiment Station, Pullman, Wash.

FORGETFUL.

"Dear Clara," wrote the young man, "pardon me, but I'm getting so forgetful. I proposed to you last night, but really I forget whether you said yes or no."

"Dear Will," she replied by note, "so glad to hear from you. I know I said 'no' to someone last night, but I had forgotten just who it was."

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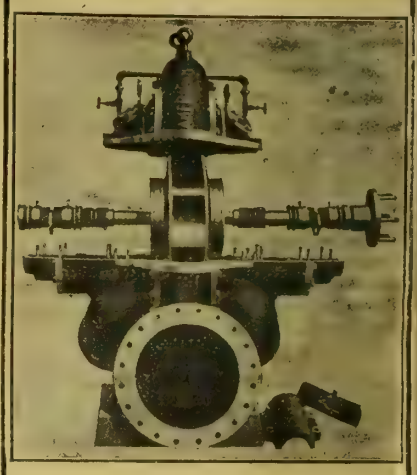

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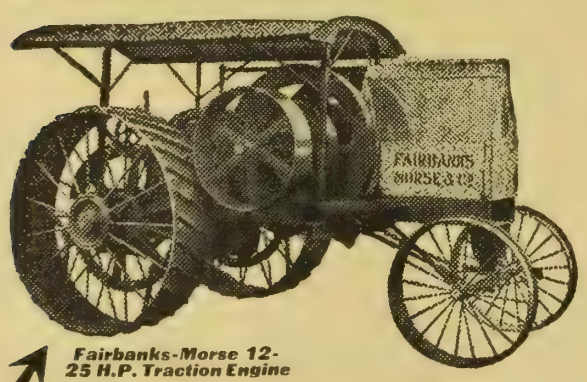

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Household Department

THANKSGIVING.

In the gloaming of November
With its foliage of gold,
Comes again the glad Thanksgiving
With its customs dear and old;
And beneath the starry banner
As it floats from sea to sea,
We a happy Nation gather,
Fears at rest, for all are free.

Not a hand in all this Nation,
In the East or in the West,
Bars the mansion or the cottage
To the kind Thanksgiving guest;
From the balmy groves of Southland
To the nodding pines of Maine,
Nature, filled with joy and triumph,
Spreads the yearly feast again.

We are thankful for the blessings
That have crowned our cherished land—
Fruitful orchards, golden harvests,
Peace and love from strand to strand;
'Neath November's robes of beauty
Hidden lies the warrior's sword,
And the olive branch is hanging
O'er Columbia's festal board.

Aye, from mountain unto mountain,
'Neath the Union's azure dome,
To the feast we spread each autumn,
Bid the absent welcome home.
Round the board where all are merry
Let the rarest sunlight play,
With the love-key of Thanksgiving
Open every heart today.

Heaping full are all our garners,
And our rivers as they run
Sing a matchless song of plenty
To the distant seas of sun;
As a people God has blessed us.
Who are happier today?
Let the land from mount to ocean
Sing a sweet Thanksgiving lay.

Hail the hallowed Thanksgiving
That the Pilgrim Fathers gave!
Tis their legacy forever
On the land and on the wave;
Then, as Freedom's chosen people;
We our destiny fulfill,
Let the future's glad Thanksgivings
Find us grander, greater still.

—Anonymous.

THE THANKSGIVING THAT RAN AWAY.

By Mildred Norman.

The big turkey gobbler had made a splendid fan of his tail-feathers, and was strutting up and down the poultry-yard, the proudest bird alive.

Carrie and Paul were looking through the wire fence and admiring him.

"It seems a pity to cook him, doesn't it?" said Carrie.

"He is handsome," replied Paul, "but how could we have any Thanksgiving without him?"

It was the day before Thanksgiving, and at night Mr. Murphy was coming to the barn to get Mr. Gobbler ready for the roasting-pan next morning.

"Be careful to fasten the gate securely," said Mrs. Denning to Paul, as she went out to feed the poultry.

"All right, mother," said Paul carelessly. He had fastened the gate so many times, what was the use of reminding him? "This latch needs a screw," said Paul, "but the hens do not know it nor the gobbler. I'll fix it after Thanksgiving."

Carrie and Paul ran almost all the way home from school that night so eager were they to get another sniff of the delightful odors that stole from the kitchen, suggesting all kinds of good things.

How the wind blew, and chased them and pelted them with the crisp, brown leaves! How cosily the blue smoke came curling up from the chimneys of the houses they passed! And the crows cawed so lustily it seemed as though they knew what a good time was coming. Carrie and Paul stopped a moment to watch the smoke.

"Yes," said Paul, "it is going up as straight as can be. We shall be sure to have a pleasant day tomorrow."

"And Aunt Caroline and Bessie and Frank and Edgar will be sure to come then," said Carrie. "Oh, goody! I can't wait for tomorrow."

They burst into the kitchen like a young cyclone, and ran to the stove and the table and the pantry and the cellar. And lastly they ran to the dining room where they knew there would be a big pile of nuts ready to be cracked, and two nut-crackers waiting to be used.

"We must eat one of each kind to see if they are good," said Paul.

"And if any look uncertain, we must eat them to make sure the company do not get bad nuts in their mouths," said Carrie.

Paul was the first one to put a suspicious nut in his mouth, and he was making a wry face over it when a big, thumping knock came at the back door.

"Mr. Murphy!" cried the children in a breath. "Gobbler is ready. He doesn't look so handsome now, but how good he will taste!" said Carrie.

They ran into the kitchen to have a look. There stood Mr. Murphy in the doorway, and Mrs. Denning looking at him inquiringly.

"I can't foind no torkey, ma'am," said Mr. Murphy. "I've looked all over the yard and the houses and coops beyant and all over the place, and not a bit of a torkey can I foind."

No one spoke for a moment. Then the children made a dash for the poultry-yard. They, too, ran all over the place without finding anything of the turkey except a few feathers. Mrs. Denning went out and looked, and then she dismissed Mr. Murphy.

"Oh, mamma, can't he stay and fix us a chicken?" cried the children.

But Mrs. Denning said there were none that could be spared, and as soon as the door closed on Mr. Murphy, Carrie and Paul sat down and cried. You would have thought their hearts were broken,—and Paul considered himself quite a young man, too, for he was almost ten, and Carrie was half past seven.

"Somebody stole our turkey," said Paul, when he could speak.

"A dreadful bad man," said Carrie. "I hope it will make him sick."

"Maybe he was a very poor man, who never stole anything before, and had a lot of hungry children who had not a thing to eat," said Mrs. Denning.

This made Paul and Carrie thoughtful.

"He needn't have stolen, then. He might have come to the door, and asked for something," said Paul.

"Maybe he did not steal the turkey, but found one running wild, and shot it," said Mrs. Denning.

This gave the children an idea, and recalled to Paul's mind the latch that needed mending.

"Let's go and look," said Carrie in a whisper to Paul. "Maybe the turkey did get out somehow, and is out in the woods now."

But it was fast growing dark, and Mrs. Denning told them they would have to wait until morning.

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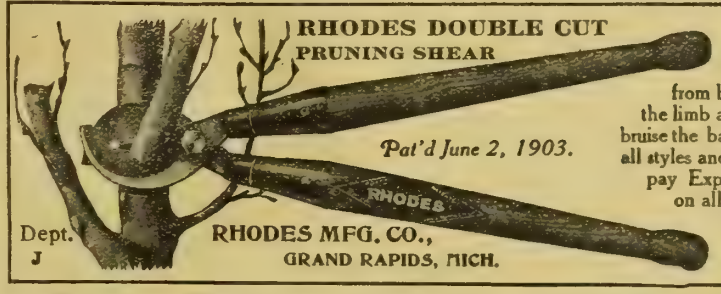

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It was hard to wait when the man with the gun might be that very moment takig aim at their Thanksgiving turkey, and Mrs. Denning told them that they might inquire in the neighborhood if any one had seen a stray turkey.

They ran as fast as they could from house to house, but no one had seen anything of gobbler. Then they went home, and were so tired and troubled they could not eat any supper, not even a cranberry tart, but went to bed and sobbed themselves to sleep.

Bright and early they were out next morning, looking all about the woods back of the house, and calling "Gobble, gobble, gobble," but no answering gobble came back to them.

Paul climbed a tree to get a "good look around," and in his haste tore a large rent in his knickerbockers, and Carrie fell into the brook, and lost her hair ribbon. Altogether they were in a sorry plight when they got home.

"It's all my fault," said Carrie. "I forgot to feed him yesterday. I thought I would play a while first, and then I forgot it. That made him want to get out. But I can't see how he did it. Isn't it dreadful to have your Thanksgiving run away?"

"It is all my fault," said Paul, trying to comfort his sister a little, and looking ruefully at the gate and the latch that he had not mended. "I'll never leave a screw loose again."

They went sadly into the house; gay voices greeted them. There were the cousins and Aunt Caroline, all smiling and chatting just as though the Thanksgiving had not run away.

Paul and Carrie tried to get in without being seen, that they might change their clothes and make themselves look well, but Bessie's bright eyes spied them out, and the three cousins flew upon them and began to exclaim and to ask questions and to laugh, as though there was nothing in the world to cry about.

"What smells so good out in the kitchen?" cried the cousins in a chorus. "Come out and see." And out they tripped, full of glee and holding fast to Paul and Carrie.

"M'm, turkey!" said Bessie, standing on tiptoe and taking a delicious sniff.

"No," said Paul. "Hasn't mamma told you?"

"But I'm sure I smell turkey,' insisted Bessie. "Course it's turkey," cried the two boys; 'just as if we don't know turkey." And Bessie ran to the over-door, peeped in, and then threw it wide open. "There!" she said.

Sure enough, a big gobbler was sizzling in the roasting-pan and browning beautifully. Paul and Carrie could not speak for amazement. Was it after all a bad dream? Or was this a dream?

The cousins laughed more and more, and at last Frank shouted, "He got out and ran over to our house. We knew him by the ring about his neck."

"And mamma had him fixed all ready to put in the oven, and we came over as early as we could," said Bessie.

"Where did you go? We have been out looking everywhere for you," said Edgar.

Then Paul and Carrie began to smile once more, and Carrie got away from the merry cousins and ran upstairs to change her wet shoes and frock and tie a fresh ribbon on her braid; but Paul went out to the poultry yard and put a new screw in the latch, and did several other things that he had been putting off for another time. And the cousins could not coax him away until he had finished.—Sunday School Times.

THANKSGIVING RECIPES.

Oyster Soup.

One quart oysters; 1 pint milk; 2 tablespoons butter; 1 teacup hot water; pepper, salt; strain liquor from oysters, add water and place over a hot fire in granite kettle. When near the boil, add salt, then oysters. Cook about five minutes from the time they begin to simmer, until they ruffle. Stir in the butter, let come to a boil and pour into the tureen. Stir in the boiling milk, and send to table. All water in place of milk may be used if preferred.

Roast Goose.

Stuff the goose with a dressing made as follows: Potatoes boiled, peeled and mashed fine and light; 1 tablespoon salt; 1 teaspoon pepper; 1 teaspoon sage; 2 tablespoons of onion juice; 2 of butter. Truss and dredge well with salt, pepper and flour. Roast before the fire (if weighing eight pounds), one and one-half hours; in the oven, one and one-quarter hours. Make gravy. No butter is required for goose, it is so fat. Serve with apple sauce.

Roast Duck.

Ducks to be good must be cooked rare; for this reason it is best not to stuff. If you do stuff them, use the goose dressing, and have it very hot. The better way is to cut an onion in two and put in the body of the bird, then truss, and dredge with salt, pepper and flour, and roast it before the fire, forty minutes; if in the oven, thirty minutes. The fire must be very hot, and the oven a very quick one. Serve with currant jelly and a sauce.

Roast Pig.

Select a pig from four to six weeks old. Clean it thoroughly, using a teaspoon of soda in the water you wash the inside with. Wipe dry and stuff with a dressing made of bread crumbs highly seasoned with butter, sage, salt and pepper. Sew it up. Skewer the fore legs forward, and the hind legs backward. Rub it over with butter, and sprinkle with salt, pepper and flour. Put it in a dripping pan with a little water and bake about three hours, basting often. It is not necessary to have the oven very hot at first; be careful not to let it burn. When done, place it on a platform; garnish with parsley and put an apple or small ear of corn in its mouth.

Plain Dressing for Roast.

One large or two small stale loaves of bread, three-quarters pound butter, one teaspoon salt, two teaspoons sage, one teaspoon pepper. Use only the soft part of the bread, finely crumbed, and work in the butter without melting.

Cranberry Sauce.

One quart cranberries, two cups sugar, one pint water; simmer until they burst open, do not stir, put sugar in after they have burst open, boil for twenty minutes.

Baked Sweet Potatoes.

Wash perfectly clean, wipe dry, bake in quick oven according to their size, half hour for small size, three-quarter hour for larger, and full hour for largest. Let the oven have a good heat and do not open unless it is necessary to turn them until they are done.

Cabbage Salad.

Two quarts of cabbage, chopped. Mix with the following dressing:

Mayonnaise Dressing.

Put in a stew pan a lump of butter the size of an egg. When melted put in tablespoon of flour, add teacup of

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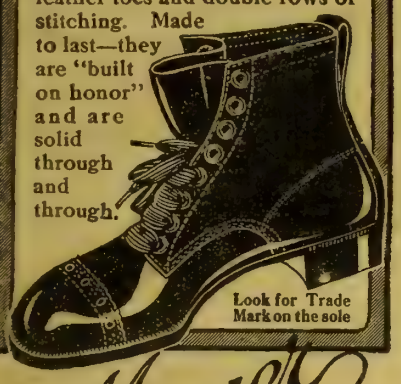

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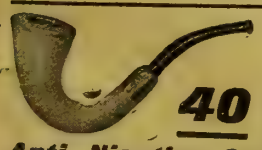

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water and let boil. Have ready three beaten eggs mixed with a tablespoon of sugar, one teaspon dry mustard, one teacup vinegar, stir in with the rest of the ingredients, let come to a boil, and set away to cool. Pour onto chopped cabbage, stir well. Half a cup of sour cream is an improvement stirred in just before served.

Pumpkin Pie.

Peel, slice and stew pumpkin until tender and almost dry, mash fine, add one quart rich milk with a little sweet cream, three cups pumpkin, two cups sugar, little piece butter, four eggs, yolks beaten thoroughly and stirred in and whites beaten to a froth and added just before putting pie in oven, scant tablespoon of ginger and cinnamon. Have a rich crust and bake in a quick oven.

Mince Pie

One pound chopped apples, one pound stoned raisins, one pound suet chopped fine, half pound citron, half ounce of mixed spice, one pound sugar, one teaspoon salt, mix thoroughly, add enough water to moisten and cook for one hour, half pint cider. When making the pies add a little more sugar if necessary.

Baked Hubbard Squash.

Cut in pieces, scrape out the seeds and soft part, bake from one to one and one-half hours, according to the thickness of the squash.

THANKSGIVING DAY.

Every Thanksgiving I thank God that I am an American. I know the faults of my countrymen, their brag, their bluster, their self-assertion, but I have traveled a great deal and come in contact with many races of men, and I have never found anywhere kinder-hearted, more unselfish, more God-fearing, more intelligent, broader-minded men and women than those whom I am proud to call my fellow-citizens.

This year every harvest field groaned under its magnificent tribute. Did that come from you? You indeed sowed the seed, you ploughed, you reaped, you invented the machines which lessened so greatly the toil, but the sunlight, the mysterious chemistry of the air and the earth, the fertilizing of the rain, that unseen, untraceable force which out of the shining grain developed the nodding cornstalk with its tassels stirring in the evening breeze, was not all that direct from God? Ought He not to be devoutly thanked for it, not only by words, but by the grateful tribute of an unselfish life?

The Old Testament is full of the thanksgiving of ancient Israel over His mercies to them, but just compare what he did for them with what He does for us. He dried up the Red Sea for their marching armies, it is true, but He has enabled us almost to annihilate distance and in a few hours to transport our armies thousands of miles. The walls of Jericho fell down at the shout of Judah, but our skill has fashioned engines which would crumble walls ten times as stout to powder. He gave them the little land of Palestine. He has given us a glorious empire which stretches from ocean to ocean, with every climate, and rich with every production. Now do you think we can enjoy all this wonderful blessing of God without conditions? that we can do just what we please, and that still our march will be onward? Do you think we can throw away the recognition of God, throw away thanksgiving, throw away virtue, become a nation of atheists, become a swinish, besotted race, and still be able to possess and enjoy this matchless heritage? You are poor readers of history, to say nothing of the Bible, if you think so.—Rev. Clinton Locke, D. D.

THE THANKSGIVING SPIRIT.

Thanksgiving Day is not a day for scolding, fault-finding or reminding people of their failures. The pessimists should disappear from sight and sound that day. In the home, in the church, upon the street, let there be joyful, praiseful lives. Let the world hear only words of cheer and messages of hope and gratitude. Whatever another year may bring, let this Thanksgiving Day be one of receiving and giving forth joy.

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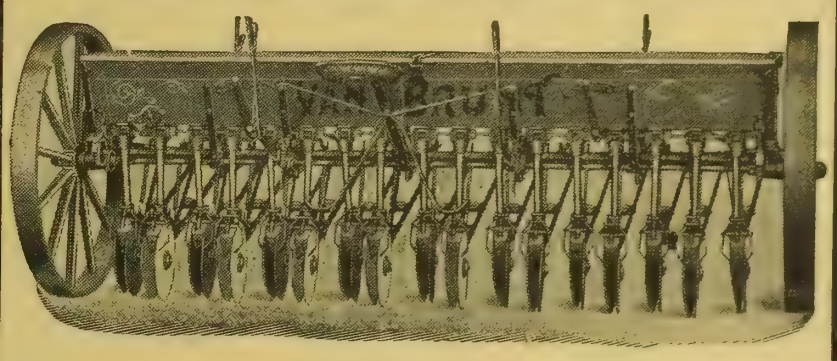

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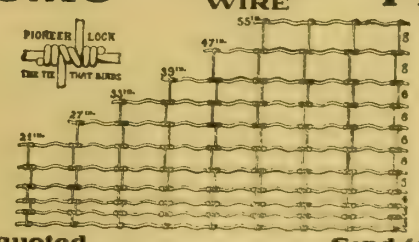

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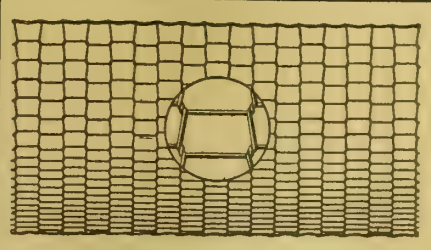

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San Francisco-Los Angeles Produce Markets

Los Angeles Market

LOS ANGELES, Nov. 22, 1911.

Butter.

No change in butter during the week, and the market is featureless at this writing.

Prices to trade 2½c in advance of the following Produce Exchange quotations:

Extras	31½
Firsts	30
Ladles	25
Country	23

Cheese.

Local Anchor	16
Oregon Daisy	17½@18
Northern Fresh	16@17
Domestic Swiss	18
Imported Swiss	33

Eggs and Poultry.

The egg market is firm, with good demand. No change.

Buying prices f. o. b. Los Angeles are:

Local Ranch Candled	47
Case Count	43
Eastern	32@34
Eastern storage	25@26
Pullets	26

Dealers pay for live poultry f. o. b.:

Hens, lb	12@16
Roosters	8
Broilers	20
Fryers	14
Roasters	14
Turkeys	19@22
Ducks	13
Geese	13
Guinea Hens, doz	4.00
Squabs, doz	1.75

Live Stock.

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs	7
Prime Steers	6
Heifers	6
Calves, lb	6½
Sheep, Ewes, head	4.75
Lambs, head	3.75@4.25
Wethers	5.00@5.60

Potatoes.

Wholesale prices are:

Sweets, Yellow, cental	1.50@1.75
Highlands, cental	1.75@1.90
Salinas	1.90@2.10
Lompoc	2.10
Oregons	2.35

Onions.

Wholesale quotations:

Australian Brown, cental	1.75
Silverskins, sack	1.75@1.85
Yellow Danvers, cental	1.75
White Wax	1.50@1.65
Garlic	5@6

Vegetables.

Wholesale quotations:

Artichokes, Northern, doz	90@1.10
Beets, doz bunches	35
Bell Peppers, lb	4@5
Brussels Sprouts, lb	8@10
Beans, Limas	4@5
Beans, Green and Wax	4@5
Chilis, Green	3@5
Chilis, Red	15@16
Cucumbers, lugs	60@75
Cabage, sack	65@75
Cabbage, Red, lb	3@3½
Cauliflower, doz	50@65
Celery, New, crate	2.35@2.50
Carrots, sack	90@1.00
Egg Plant	3@5
Horseradish, lb	13½
Onions, Green, doz bunches	15@20
Kohl-rabi, doz bunches	40
Leeks, doz	35@40
Lettuce, crate	90@1.10
Mushrooms, lb	50@1.00
Oyster Plant, lb	15@20
Okra	6@8
Peas, lb	4@6
Parsnips, doz bunches	45
Parsley, doz bunches	25@30
Turnips, sack	90@1.00
Radishes, doz bunches	15@20
Rhubarb, Crimson Winter	90@1.00
Spinach, doz	15@20
Squash, Summer	50@60
Spearmint, doz	25@30
Tomatoes, lug	40@50
Turnips, sack	1.00@1.25
Watercress, doz	35@40

Do your cows milk hard? Send 50 cents for test expander. O. J. Weber Co., 225-227-229-231 East Sixth St., Los Angeles, Cal.

Citrus Fruits.

Valencias	4.50
Grapefruit	3.00@6.00
Lemons	3.50@4.00
Limes, hundred	1.25

Fresh Fruits.

Wholesale prices on the market are:

Alligator Pears	1.25@1.50
Apples, Bellefleurs	90@1.25
Apples, Spitzenbergs	1.10@1.50
Apples, Pearmains	1.25
Apples, Jonathans	1.90@2.35
Bananas	4½
Casabas, crate	1.50@1.75
Christmas Melons, crate	1.75@2.00
Figs, box	75@1.25
Grapes, Thompson Seedless, lb	3
Grapes, Black Hamburg, lug	65
Grapes, Muscats	75@90
Grapes, Tokays	85@1.00
Grapes, Cornichon	1.10
Loganberries	6@8
Peaches, lug	1.50@1.75
Pineapples	8@10
Quinces, lug	1.00@1.10
Persimmons	1.00@1.25
Pomegranates, lug	75@1.25
Plums, Clymans, lug	1.50
Plums, Tragedy	1.50
Pears, Bartlett, lb	7
Blackberries,	10
Raspberries	10@12
Strawberries	8@12
Watermelons, lb	¾@1

Dried Fruits.

Wholesale prices to retailers are:

Evaporated Apples, fancy, lb	11@11½
Apricots	16@17
Figs, box	1.50@1.75
Peaches	11@12½
Nectarines	12
Pears	12@13
Prunes	7½@15
Plums	10

Beans, Dried.

Wholesale quotations:

Limas	5.75
Black Eyes	4.50@5.00
Pinks	3.85@4.00
Lady Washington	4.75
Small White	4.75
Garvanzas	4.50
Bayous	4.50@5.00
Lentils	6.00@7.00
Mexican Reds	4.75@5.00

Nuts.

Wholesale quotations:

No. 1 Soft Shell Walnuts	15@16
No. 1 Hard Shell Walnuts	13½
No. 2 Walnuts	11
Almonds, IXL, lb	19@20
Pecans, polished	15@17
Pecans, Eastern	8
Peanuts, California	6
Pine Nuts	18

Honey.

Wholesale quotations:

Extracted Water White	8½
Extracted Light Amber	7½
Comb Water White	16@17
Light Amber	13@14
Beeswax	30

Hay.

Buying prices f. o. b. cars Los Angeles:

Barley Hay	14.00@16.00
Wheat Hay	14.00@15.00
Tame Oats	18.00@20.00
Alfalfa	13.00@14.50

Grain.

Wholesale selling price f. o. b. Los Angeles:

Wheat, new, cental	1.75@1.80
Corn	1.70@1.95
Kaffir Corn	1.80
Millet	3.75
Popcorn	4.75@5.00
Egyptian Corn	1.80
Red Oats	2.00
Seed Barley	1.50
Milo	1.95

Feed Stuff.

Wholesale selling price f. o. b. Los Angeles:

Alfalfa Meal	1.15
Beef Scrap	3.00
Bone Meal	2.05
Charcoal	1.95
Cracked Corn	2.00
Cracked Wheat	1.90
Shorts	1.85
Bran	1.60
Oil Cake Meal	2.60
Feed Meal	2.05
Rolled Barley	2.10
Rolled Oats	2.00
Middlings	1.85

Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 225-227-229-231 East Sixth Street, Los Angeles.

San Francisco Market

SAN FRANCISCO, Nov.21, 1911.

Butter.

A drop of a half cent on extras and a cent on firsts was made on Saturday. No other change during the week, with firm market at this time.

Prices to trade 2½c in advance of the following Produce Exchange quotations:

California Extras, lb	31
Prime Firsts	28
Firsts	26
Seconds	24

Cheese.

California Flats	13½@17
Cal. Young America, fy, new	15@16½
Oregon, fancy	14½

Eggs and Poultry.

Extras are now exactly as last week, though a drop was made a few days since, which was recovered on Monday. Pullets show a loss of a cent, and storage a gain of a cent.

Official quotations of the San Francisco Wholesale Dairy and Produce Exchange are:

Fresh Ranch Extras	51
Firsts	45
Seconds	28
Select Pullets	42
Storage Extras	28
Hens	4.00@10.00
Fryers, doz	5.00@6.00
Ducks	4.00@8.00
Broilers	3.00@4.50
Roosters, doz	4.00@9.00
Geese	2.00@2.50
Goslings, pair	2.00@2.25
Pigeons	1.50@2.00
Turkeys	20@25
Squabs	2.00@3.00

Live Stock.

San Francisco prices, gross weight:

Steers	4@6
Cows and Heifers	3@4¾
Calves, lb	5½@6¾
Hogs	6½@6¾
Wethers, No. 1	3¾@4
Lambs	4½@5
Ewes, No. 1	3¼@3½

Potatoes.

Wholesale market quotations:

River Whites, cental	1.10@1.35
Alamedas	1.15@1.65
Sweets, cental	1.65@1.85
Salinas Burbanks	1.65
Northern Burbanks	1.45@1.60

Onions.

Yellow, New	1.00@1.25
Garlic, new, lb	3@4

Vegetables.

Wholesale quotations:

Asparagus, box	1.00@1.75
Beans, String	4@7
Beans, Wax	2½@4
Limas	4@6
Bell Peppers, box	75@1.00
Cabbage, cental	75@85
Cauliflower, doz	40@60
Carrots	40@60
Cucumbers, box	75@95
Corn, sack	50@1.25
Chile, box	35@90
Celery, crate	2.00@2.25
Egg Plant, box	40@85
Lettuce, crate	75@2.00
Okra, box	65@1.00
Peas, sack	1.75@2.00
Hubbard Squash, sack	40@60
Summer Squash, lug	65@1.25
Squash, Marrowfat	50@65
Tomatoes, box	35@75
Turnips	60@75

Citrus Fruits.

Navels	2.00@2.50
Valencias	3.25@4.50
Grapefruit	2.00@3.75
Lemons	2.00@5.50
Limes, Mexican	4.50@5.00
Tangerines	1.25@1.50

Cream Separators, all sizes and prices. O. J. Weber Co., 225-227-229-231 East Sixth Street, Los Angeles.

Fresh Fruits.

Apples, Bellefleurs	65@1.00
Apples, Newtons	75@1.25
Apples, Spitzenberg	85@1.35
Cantaloupes, standard	40@1.40
Nutmegs, large, crate	35@1.00
Figs, double box	1.15@1.50
Grapes, Black	50@60
Grapes, Muscat, lug	75@1.15
Grapes, Tokay	50@65
Pears, Winter, box	75@1.75
Quinces, box	50@75
Blackberries, chest	5.00@6.00
Raspberries, chest	8.00@11.00
Strawberries	4.00@7.00
Pineapples, Hawaiian	2.00@3.50
Bananas	1.00@1.50
Watermelons, doz	1.25@2.00

Dried Fruits.

FRUITS—1911 crop, f. o. b., carload lots, per lb., Apples, 8@9c; Apricots, 12½@15½; Peaches, 9¼@11c; Prunes, bulk basis, 6@7½c; per lb, 4¾@10c; Figs, 4¼@5½c for White; Pears, 9½@12½c.

RAISINS—1911 crop: Seeded, per pkg—Fancy, No. 16, 6¼c; Choice, No. 16, 6c; Loose Muscatels, in 50-lb boxes—Standard, 4-crown, 5¼c; 3-crown, 4¾c; 2-crown, 4¼c; Seedless Muscatels, 5½c; Sultanas, 6@6¼c; Thompsons, 7@7½c.

Nuts.

Walnuts, No. 1 Soft Shell	14
Walnuts, No. 1 Hard Shell	13½
Almonds, N P U	16@16½
Almonds, Nonp	18@18¾
Pecans	14@17
Chestnuts, California	6@8
Peanuts	5@5½

Beans, Dried.

Limas	5.60@5.70
Pink	3.10@3.20
Black Eyes	3.80@4.00
Small White	4.10@4.15
Large White	4.05@4.15
Kidneys	5.00@5.15
Garbanzos	3.00@3.25
Bayou	3.65@3.85
Red Mexican	4.50@4.60
Horse Beans	2.75@3.00
Cranberry	4.00@4.15

Hops.

Hops, Coast, 1910	30@40
Hops, 1911	40@45
Hops, Oregon, 1911	40@45

Honey.

Water White, Comb, 1911	15@16
Dark Comb	12½
Extracted White, 1911	8½@9½
Extracted Dark	5@6
Beeswax, lb	24@30

Hay.

Scott, Magner & Miller say:

Arrivals of hay have been 3,350 tons during the past six days. This amount is just about the average that we have been receiving for several weeks past.

We are pleased to note a little inquiry from a number of the country districts who are now in the market for hay. This trade is particularly advantageous to this market, as it will keep considerable hay tributary to our markets from coming to San Francisco, and to that extent will better the situation generally.

There has been somewhat of hay sent forward on export account during this past week, and there are orders now in process of being filled which will move off quite a little hay.

Alfalfa has continued to come in large quantities steadily from the river districts, but this hay is now pretty well cleaned up, and the market on this article should take on a little better tone.

We quote the wholesale prices in round lots on today's market as follows, viz.:

Fancy Wheat Hay	18.50@20.00
No. 1 Wheat or Wh & Oat	16.00@17.50
No. 2 Wheat or Wh & Oat	13.00@14.00
Choice Tame	16.00@17.00
Other Tame Oat	11.00@14.00
Wild Oats	10.00@13.00
Stock Hay	5.50@6.00
Alfalfa	9.00@11.00
Straw, bale	60@70

Grain.

Wheat	1.47½@1.52½
Barley, fancy	1.92½
Barley, good to choice	1.90
Barley, poor to fair	1.80@1.85
Corn	1.60@1.62

Oats, White	1.72½@1.82½
Rye	1.50@1.57½
Mustard, Brown	5½
Alfalfa Seed	18
Millet	2¾@3
Flaxseed	5@5½
Broom Corn Seed, ton	30.00

Feed Stuff.

Alfalfa Meal	15.00@17.00
Bran, ton	26.50@28.00
Feed Cornmeal, ton	38.00@39.00
Cracked Corn	38.00@39.00
Rolled Barley, ton	39.50@41.50
Rolled Oats, ton	37.00@38.00
Middlings	32.50@35.00
Oilcake Meal	42.00@43.50
Cocoanut Cake, ton	24.00@25.00
Mixed Feed, ton	25.00@27.00
Shorts	29.00@30.00

Deciduous Fruit Market

F. B. McKevitt, general manager of the California Fruit Distributors, reports:

Sacramento, Cal., Nov. 18, 1911.

The following gives number of cars of deciduous fruit shipped from all points in Califorina for the week (seven days) ending Friday morning, Nov. 17, 1911:

Pears, 2 cars: These pears consist mostly of Easter Beurres, with a few small lots of other varieties, which represent the finish of the crop. While it is possible there may be a car or two yet to go forward, it is not probable, and it is expected that this shipment will be the last of this variety for the season.

Grapes, 209 cars: The varieties now going forward are mostly Emperors, with a few Cornichons. Heavy frosts in most localities have destroyed what grapes were on the vines. In a few sheltered places, however, no damage was done, and limited shipments will go forward for a few days yet. It is not likely that the entire shipments from the state from this time on will aggregate more than possibly 100 cars, and it may not be as large as this. It is expected that the shipments will be entirely completed during the next seven days.

Weather is now pleasant, but rather cool, with light frosts every morning.

Comparative statement of shipments up to November 11:

	1910.	1911.
Cherries	250½	216¼
Apricots	289¾	214½
Peaches	2,517¾	2,027
Plums	1,552½	1,366
Pears	2,361	2,312¾
Grapes	4,829½	6,068½
Sundry	16	16¼
Total	11,817	12,221¼

Citrus Fruit Market

LOS ANGELES, Nov. 22, 1911.

Navels now going forward from Northern and Central California are being well received and commanding not far from $2.50 f. o. b. for first class stock. Generally the fruit is well colored. Florida and island fruit is satisfying the demand of the Eastern coast trade, and Valencias are still being offered in the auction. No Navels have yet reached the auction markets.

Lemons are still holding up a fair price and being well received. Shipments are considerably in excess of last year at this date.

Shipments.

Shipments of oranges to date this season since Nov. 1, 79 cars; lemons, 277; total, 356. To same date last season: Oranges, 73 cars; lemons, 260; total, 333.

NEW YORK, Nov. 21.—Four cars Valencias, three cars lemons sold. Market steady on oranges, easier on lemons. Weather fair.

Valencias.	Avge.
Naralimo, Sparr F. Co.	$4.75
Circus, xc, Sparr F. Co.	3.75
Old Mission, fy, Chapman	7.05
Old Mission, ch, Chapman	5.90
Golden Eagle, sd, Chapman	5.00
Lady Rowena, Chapman	4.05
Diamonds A	3.15
Diamonds B	2.25
Stag, A. C. G. Ex	5.85
Pointer, A. C. G. Ex	3.95
Hunter, A. C. G. Ex	2.95
Half Boxes Tahiti Seedless Limes.	
Red and Blue Label	$ .70
Lemons.	**Avge.**
Protection	$3.25
East Highland	3.60

BOSTON, Nov. 21.—One car sold. Cool, cloudy. Market unchanged.

Lemons.	Avge.
Squirrel, A. H., Arl.	$4.40
Blackhawk, A. H., Arl.	3.75

NEW YORK, Nov. 20.—Seven cars Valencias, five cars lemons sold. Market higher on Valencias, especially large sizes; lemons lower. Partly cloudy.

Valencias.	Avge.
Rooster, S. S. Ex.	$5.10
Aloha, xc, C. M. Brown	3.90
Brownie, fy, Rialto Ft. Co.	4.50
Country Club, ch., Rialto F. Co.	2.30
Caledonia, xc, Placentia, M. O. A.	5.40
Cambria-Albion, Placentia M.O.A.	4.60
Old Mission, fy., Chapman	6.90
Old Mission, ch., Chapman	5.80
Golden Eagle, sd., Chapman	4.95
Lady Rowena, Chapman	4.10
Old Mission, fy., Chapman	7.35
Old Mission, ch., Chapman	5.85
Golden Eagle, sd., Chapman	5.05
Lady Rowena, Chapman	4.10
Corona, National O. Co.	4.55
Corona, stds., National O. Co.	3.15
Naralimo, Sparr Ft. Co.	4.75
Circus, Sparr Ft. Co.	4.15
Lemons.	**Avge.**
Pet, S. A. Ex.	$4.00
Arab	3.60
Greyhound	3.40
Squirrel	3.95
Black Hawk	2.90
Quail	3.60
Coyote	3.10
Liberty Coyote	3.35
Foxaway	2.95
Independent, fy	3.95
Choice	2.95

CLEVELAND, Nov. 20.—One car Valencias, one car lemons sold. The market is advancing on Valencias. Prices low on lemons account of quality. Snowing.

Valencias.	Avge.
Martha Washington, S. S., Tus.	$4.15
Cowboy, S. S., Tustin	3.80
Valencias—Half Boxes.	**Avge.**
Martha Washington	$1.90
Cowboy, S. S., Tustin	1.90
Lemons.	**Avge.**
Basket, C. C., Lemoncove JMBS.	$1.65
Basket, Cen. Cal.	3.25
Kaweah Maid, Cen. Cal.	4.25
Standard, Cen. Cal.	2.45

ST. LOUIS, Nov. 20.—Cool, cloudy. Market weak on account of the condition of the fruit. One car sold.

Valencias.	Avge.
Searhclight, S. S., Orange	$3.10
S. S. Brand, S. S., Orange	3.00
Lemons.	**Avge.**
Lone Palm, S. S., Orange	$3.50
Searchlight, S. S., Orange	3.75
Plain Ends, S. S., Orange	2.40
Planet, S. S., Orange	3.55
S. S. Brand, S. ., Orange	2.85

PHILADELPHIA, Nov. 20.—One car oranges, one car lemons sold. Also twenty cars Floridas. Oranges, $1.70 to $3.85; average, $2.40. Grapefruit, $2.90 to $5.15; average, $4.20.

Valencias.	Avge.
Tustin Gem, Tustin P. Co.	$3.70
Old Oak, Tustin P. Co.	3.30
Lemons.	**Avge.**
Transcontinental, S. S., El Mod.	$4.60
El Modena, S. S., El Modena	3.80
Goldfinch, S. S., El Modena	4.35

CINCINNATI, Nov. 20.—Cool. Market steady on lemons and on Florida oranges. Florida Brights, $1.30 to $2.45; Russets, $1.30 to $2.25.

Lemons.	Avge.
Housewife, Riv. Arl. Sta.	$3.70
Pride of Cal., Riv. Arl. Sta.	2.80
Housewife, Riv. Arl. Sta.	3.70

PITTSBURG, Nov. 20.—Two cars sold. Market firm on good stock lemons; strong on Valencias. Cool, cloudy.

Valencias.	Avge.
Naralimo, Sparr Ft. Co.	$4.35
Plain Ends, Sparr F. Co.	3.85
Circus, xc, Sparr F. Co.	4.00
Lemons.	**Avge.**
Trail, A. C. G., Lamanda Park.	4.15
Canyon, A. C. G., Lamanda Park.	3.95

BOSTON, Nov. 20.—Three cars sold. Market doing better on oranges, unchanged on lemons.

Valencias.	Avge.
Mission, Johnson Ft. Co., S. B.	$4.10
Scepter, S. S., Orange	5.70
S. S. Brand, S. S., Orange	3.80
Festival, Johnson Ft. Co.	4.15
Searchlight, S. S., Orange	5.15
Plain Ends, S. S., Orange	3.10
Lemons.	**Avge.**
Rey, S. T., Fernando	$4.55
Tunnel, S. T., Fernando	4.00

PHOSPHATE DEPOSITS.

(Continued from Page 515.)

to the large copper smelters is important, for these smelters produce great quantities of sulphuric acid and sulphurous acid fumes which are usually allowed to go to waste through the smokestack of the plant. Reduction of phosphate rock by means of sulphuric acid appears to offer what is perhaps the largest commercial use for these waste products of the smelters." Mr. Gale quotes a report showing the daily loss at the Anaconda smelter alone of about 3800 tons of sulphuric acid.

Suggests Concentration.

Mr. Gale suggests a further innovation in the treatment of phosphate rock which would greatly reduce the transportation charges that at present stand in the way of development. By this process a ton of concentrated phosphate would equal three tons of ordinary superphosphate. The fertilizer distributor would therefore pay freight on one ton where he now pays it on three.

The report calls attention to the fact that under the present mining law there appears to be no adequate provision for the disposal of phosphate lands, and that it is presumed that Congress will in the near future pass some well-considered measure to cover this need.

Mr. Blackwelder's contribution on phosphate in western Wyoming is a preliminary report and shows large and widely distributed deposits. He also mentions the presence of very great quantities of low-grade rock, which in course of time will doubtless be mined. For instance, in the Snake River canyon in western Wyoming he noted a total thickness of phosphatic beds exceeding 40 feet, of which about 29 feet contain more than 30 per cent phosphoric acid and some beds contain 70 per cent or more. As showing the general lack of knowledge regarding phosphate deposits Mr. Blackwelder mentions an excavation in the phosphate beds near Tieton Pass. This tunnel, dug more than 15 years ago, was made on the supposition that the black material was coal. Its real nature was not recognized, and throughout the district the very existence of phosphate deposits seemed to be unknown to the inhabitants.

WITHOUT A RIVAL.

Seldom has an invention of so much practical value been presented to the farmers of California as that found in the Chilson Automatic Harrow, an illustration of which will be found in this issue.

We take pleasure in presenting this harrow to our readers and suggesting that they become acquainted with it, as its worth will be apparent the first time it is used and will remain in evidence throughout a number of years in labor-saving value.

Those who have personally inspected this harrow unhesitatingly state that it is without a rival. The ease with which it is operated places it in the front rank as a money maker and time saver. Complete information may be had free by writing the manufacturers.

Fruit Trees

Hardy Oregon-Grown Stock

No Irrigation or Fertilizer, hence only sturdy, normal growth, best for transplanting. Specialty in

Bartlett Pears
Yellow Newton and
Gravenstein Apples

A Full Line of Commercial Orchard Trees. Send list of wants for Special Prices.

Send for Illustrated, Descriptive Catalog. Free if This Paper is Mentioned.

J. B. Pilkington
Nurseryman **Portland, Oregon**

50 Per Cent Saved

BY BUYING YOUR OIL STOVE NOW

We guarantee that you cannot buy this stove for less than twice our price.

The New Perfection Wick Blue Flame Oil Stove, we believe the best all-around cook stove that has ever appeared, from the standpoint of efficiency, simplicity and durability. We believe it is as near perfection as human skill and modern machinery can make it.

The stoves are artistic in design and pleasing to the eye. The chimneys are enameled in blue, which makes them rust-proof and easily cleaned. With these stoves there is no time lost in lighting, but a good working flame is obtained as soon as the stove is lighted, and after use it may be instantly extinguished, thereby saving fuel.

The flame may be instantly controlled by the operator, the same as that of a kerosene oil lamp.

NEW PERFECTION WICK BLUE FLAME OIL STOVE

TWO BURNER with legs, stands 30 inches high, top 14x22 inches, shipping weight 34 lbs.
Two-burner, each.....$4.95

THREE BURNER with legs, stands 30 inches high, top 14x32 inches, shipping weight 43 lbs.
Three Burner, each.....$6.95

Surprise your wife with a NEW PERFECTION WICK BLUE FLAME OIL STOVE—she will appreciate your thoughtfulness.

See page 520 for list of special bargains in groceries, etc.

McSTAY Supply Co. INC.

439-449 E. 3rd St.
Los Angeles
California

Roseville, Sacramento County, shipped 14,000 crates of grapes during the season.

The New Pomona Power Heads

—FOR—

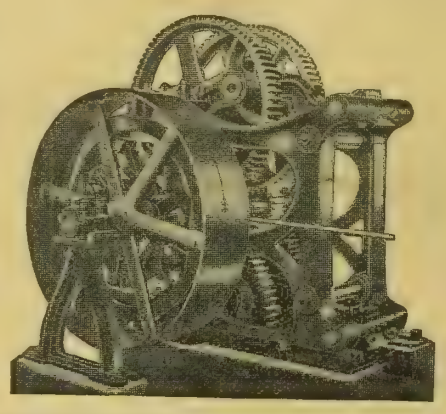
Deep Well Pumping

The New Pomona Pump is of the double plunger type; one plunger goes up while the other goes down. Its design includes the quick return motion and lap in the plungers. It is built on strictly mechanical lines, round wheels being used, and a direct center pull on the pump rods obtained. In the beam motion employed the upward motion of the pistons is much more uniform than a crank motion, producing a smoother, evener flow of water, and the downward motion is a smooth, quick, gliding movement, while the gears pass the dead points and take up the load without any JERK or JAR.

There is a long lap, so that one plunger passes the dead point and takes the load before the other reaches the top of its stroke, keeping the water in continuous motion, thereby saving power and wear and tear on machinery resulting from starting the column of water at the commencement of each stroke.

This plan produces an IDEAL MOTION of the pump rods. There is no possibility of breaking the rods as other pumps do, and the BUGBEAR that is so much dreaded in deep well pumping is avoided. It also produces a continuous pull on the belt and an even application of the power applied. The flop, flop of the belt seen in other pumps and the extreme high points and the fluctuation of the electric current when using a motor are reduced to a minimum, or, to quote the words of the City Engineer of Pomona, "The plant does its work with remarkable steadiness and has more than met the requirements of the specifications and agreements," or, in the language of the testing department of the Edison Electric Company, "The power taken is very uniform at different parts of the stroke for a pump of the plunger type."

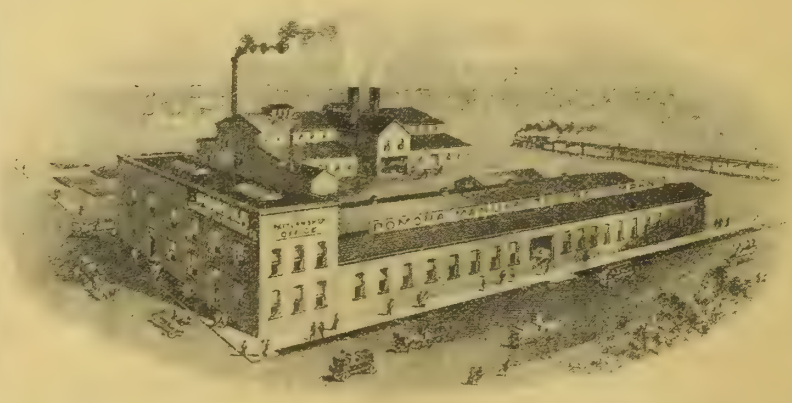
The POMONA DEEP WELL PUMPS are the standard for reliability and efficiency, and can be depended upon to do their work with less trouble than others. They are manufactured by a company who have the equipment and ability to build their machinery in a first-class manner and to install them satisfactorily to their customers.



This cut is a side-view of the New Pomona Pump showing friction pulley and cut board bearing.

OUR GUARANTEE

The Pomona Power Heads and Cylinders are guaranteed to be made of good material and built in a workmanlike manner, and we agree to furnish free of charge at our factory in Pomona, within one year from date of erection, duplicates of any broken parts on return of such broken parts, natural wear excepted. We do not hold ourselves responsible for repair bills or damages for delays.



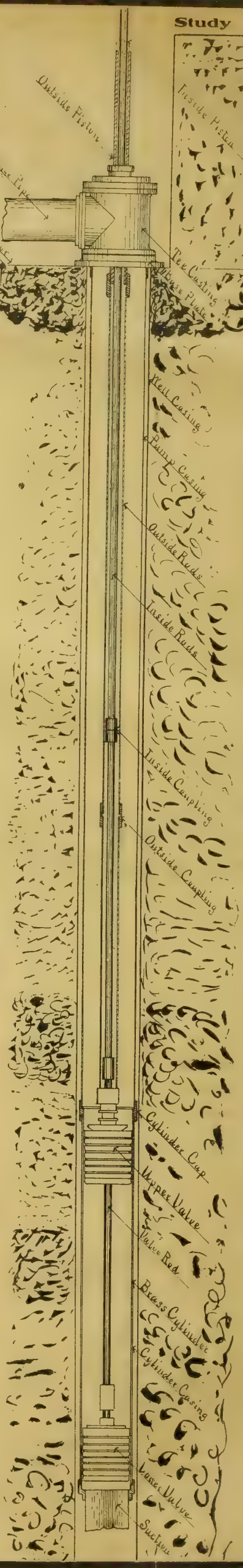
The above cut represents our plant—located in the center of the largest deep well irrigation district in the world.

Write for Catalog No. 51, or Send Us Your Specifications for Figures

POMONA MANUFACTURING CO.

POMONA, CALIFORNIA

Or C. H. WEED, Porterville, California
Agent for the San Joaquin Valley.



One of —the most important factors in the success of the Pomona Pumps is the cylinder and valves.

Our cylinders are made of the best seamless brass tubing made to order in the East. The valves are made of the best phosphor bronze and are cast and finished complete in our shop.

These valves are of the most improved pattern, have cone-shaped clappers with ground metal seats. There is only one moving part in each valve. The plungers are furnished with three or six cup leathers each, as desired, made from the best oil tanned leather.

With the New Pomona pump-head, using a quick return motion and lap in the plungers, these valves have sufficient time to seat before taking up the load of the water column, consequently there is no hammer or jar. The Pomona Pumps are taking the lead for irrigation purposes, and are rapidly displacing pumps of inferior design and workmanship.

We also make a full line of circular valves for orchard and alfalfa irrigation. The POMONA CIRCULAR VALVE can be adjusted to allow the flow of any quantity of water up to and including the capacity of the pipe line or stand pipe—by merely turning a thumb screw. It is non-corrosive, cheap, simple, requires no special tools or wrenches to operate, and is very substantial.

WE INVITE INQUIRIES.

We also manufacture our patent

PRESSURE GATE,

which has no rubber or wooden facing to rot or wear out—is absolutely water tight when closed—is cheap in price and as durable as solid iron.

Pomona Patent Pressure Gate

Write for descriptive circular and price list.

The Big Weekly { Fifty-two issues, each containing from 24 to 32 pages of practical information, } For $1 the Year

CALIFORNIA CULTIVATOR

An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch.

LOS ANGELES NOVEMBER 30, 1911 SAN FRANCISCO

A Cement-Lined Irrigating Canal

One of the Canals at Patterson, Stanislaus County

EVERYTHING FOR THE RANCHER.

This illustrates the establishment where you will find the largest assortment of the most dependable →

Implements, Engines, Wagons, Vehicles, Automobiles, Harness and All Other Goods Used by Up-to-Date Ranchers

We pride ourselves on the fact that we have hundreds of satisfied customers who are depending on us for all their supplies.

We Guarantee Every Transaction, Small or Large

Must be Satisfactory to Our Customer

This practice in connection with our well-known motto:

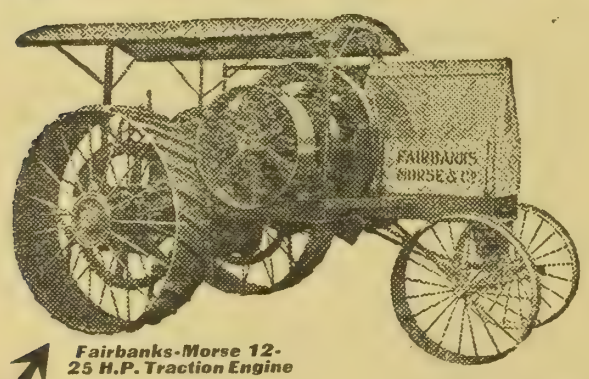
"Large Sales---Small Profits"

has given us the largest volume of business in this line in the southwest.

Give Us a Personal Call and if you can't call at the house write us a list of your wants

ARNOTT QUALITY GUARANTEED — **ARNOTT & CO. INC. 112-118 S°. LOS ANGELES ST., LOS ANGELES, CALIF.** — ARNOTT QUALITY GUARANTEED

This Traction Engine
Will Save You Money



Fairbanks-Morse 12-25 H.P. Traction Engine

The Simplest, Most Durable and Easily Handled Traction Engine on the Market

Write for Catalogue LA 37

The drawbar pull of this engine is equal to that of 12 horses. When used as a belted engine, 25 H. P. can be developed. It is well adapted to Threshing and Hay Baling

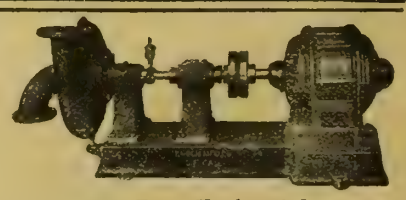
Our two-cylinder, 4-cycle Engine will operate on 3c distillate as good as with the best gasoline

We also manufacture Fairbanks Standard Scales, and Irrigation Machinery of Every Nature

This Name Your Guarantee → **FAIRBANKS-MORSE & CO.** **425 E. Third St. Los Angeles, Cal.**

Does It Not Seem Reasonable
To Assume That a Company

New Type Vertical Pump



New Type Horizontal

which has been manufacturing one line of goods for over thirty years must be in a better position to furnish superior goods than one which has been in business a few months or years? The old concern has experienced engineers, superior shop facilities and, above all, a reputation and standing to maintain.

Krogh Pumps Have Been Built for 33 Years
Our New Bulletin, C-12, tells about them.

Krogh Manufacturing Company

Our Branch House, 206 N. Los Angeles St., Los Angeles, carries a complete stock

149-157 Beale St., SAN FRANCISCO

CITRUS TREES

Navels, Valencias, Eureka Lemon, Grape Fruit and Tangerine 1 and 2 Year Buds. Sour Orange Seed-Bed Trees, 1 year.

We are offering a large stock for season of 1912. Our trees are equal to the best. Write us.

F. H. DISBROW, Propr. **SOUTHLAND NURSERIES** **R. F. D. No. 1, Pasadena, Cal.**

Apple Trees

I have propagated, and grown with skill and care, several thousand apple trees of leading varieties, including Delicious, Winter Banana and King David. Ready for delivery January. Also a few hundred pear trees and several hundred Pierce grape. Write your needs and let me quote prices.

Q. A. LOBINGIER
SAN GABRIEL, CAL.

California Cultivator

Vol. XXXVII. No. 22. LOS ANGELES: THURSDAY, NOVEMBER 30, 1911 One Dollar the Year

Middle West Farming Today and 35 Years Ago

Observations and Reminiscences by J. H. Reed of Riverside

I have been taking a leisurely tour of observation in the Middle West and the South. Possibly some account of two or three special matters looked into may interest some of the Cultivator's readers.

This Side the Missouri.

Much is written about the remarkable development of the agricultural country between the Missouri River and the Rocky Mountains. But for the most part it is written in a general way, for the purpose of making interesting reading, rather than to give definite, reliable information. My study was especially in Nebraska and Kansas. It is easy to write of the wonderful growth of these states. Of the phenomenal advance in farm values in a brief time; how their products are helping feed the world; how they are already sending strong men by the thousands to help develop newer sections of our own country, and across the border to the north, just as the states the other side of the Mississippi river were sending pioneers to these trans-Missouri virgin soils only half a life-time ago. Or of what is more remarkable, how they are already sending hundreds of heads of families from the farming districts, with self-earned ample fortunes, to spend their later years in near-by cities, or to quiet suburban life, in more friendly climates.

But how all this came about in so short a time is more easily understood if one is on the ground in actual touch with what is going on. Especially if one had some first knowledge of the earlier conditions and activities.

Increase in Value.

Thirty-five years ago the writer bought a section of Nebraska land, one hundred miles west of Omaha, for ten dollars an acre. Today that land could not be bought for less than $200 per acre, and would quickly be sold at $175, if put on the market. I found from $150 to $200 is the ordinary price at which good farming lands in that section change hands when sold, and farms for sale often go into the hands of near-by farmers who know their productive values.

Intelligent Farming of Good Soil.

The factors that have brought about this remarkable advance are not far to seek. The basis, of course, is the high grade of soil. But of equal importance was the kind of men who handled it. The pioneers were largely intelligent, sturdy men from the farming districts east of the Missouri river, experienced farmers.

It was about the time these states were being rapidly settled, that many of the most important improvements in farm implements were being made. The twine binder that revolutionized the mode of harvesting small grains was being introduced. The sulky plow, the grain drill, the thresher, the corn planter and cultivator were all being greatly improved. In many sections of the country these new and improved implements came into use very slowly. These intelligent, enterprising Nebraska and Kansas farmers quickly recognized their value and promptly put them into use.

Better Seed.

Then came the era of introducing better varieties of grains and improving the best varieties. In those earlier years the farm revenues were almost exclusively from sales of grain. Spring sown wheat with frequent failures, at first was the rule. Winter wheat was being introduced and is now mostly used. Varieties better adapted to climatic and soil conditions were sought for and these enterprising farmers enlisted the Federal Department of Agriculture in their quest, and they were found.

Corn was easily raised, but the markets were distant and net income from it small. It had so little cash value as often to be used for fuel in place of coal. The writer has eaten many a meal cooked by a corn fire, and often sat by a stove heated by the same fragrant fuel during a Nebraska blizzard. But it was not pleasant to see this splendid grain put to so ignoble a service. Cattle were soon brought in from southern and western ranges, in the fall, and in the spring our corn was marketed on the hoof in Chicago.

Breeding Up.

The average yield of corn was low in quantity and quality. About this time students of the Illinois College of Agriculture had their attention turned to breeding better seed corn. By the way, one of the young men was our Mr. Shammel whom the Washington Department of Agriculture has sent here to investigate the possibilities of improving citrus fruits by bud selection, and from what he has accomplished in this direction for other plant industries, we may have assurance that he will succeed in this the most important investigation ever undertaken in the interests of the citrus industry. He not only demonstrated the practicability of materially increasing the corn yield by use of the improved varieties in the corn states proper, but bred a variety especially adapted to the conditions of the far South and another for the thin soil and short growing season of New England.

The adoption of the improved varieties of corn by these western farmers has already increased the average yield from 10 to 25 bushels per acre. Multiply this by the millions of bushels of their annual crop and one gets some idea of the value of the progressive methods of these intelligent farmers.

Another advanced step has been made in raising their own cattle to fatten on their corn, in place of depending on the fast decreasing supply of feeders from the grazing grounds farther west.

Alfalfa.

Again, since my time they have added what is proving to be one of their most important crops. While a Nebraska farmer, I tried to keep informed as to new things and improved methods in other agricultural sections. I read with interest about the new forage crop then becoming famous in Southern California, alfalfa, or Lucerne, as we called it, and sent for some seed. I followed instructions in trying to produce a crop, but it was quite a failure, and we decided that however good alfalfa might be in California, Nebraska was no place for it. It was several years before it was tried in that section again. Now it is a leading and one of the most important crops in many parts of Nebraska and Kansas. Without irrigation, which is little used yet, they get three fairly good crops. Much of their alfalfa is ground, mixed with grain feed for local use, but largely shipped. Alfalfa mills are common, and alfalfa meal is a staple commercial product.

But the most important part this new forage crop—new in that section—plays in their modern agriculture, is its place in their scheme of rotation of crops.

Rotation.

And here we have another important factor in the explanation of the unusual progress and prosperity of this agricultural section. For many years we have heard much about the value of rotation of crops. And its value is generally accepted in theory. But on going about, I find in actual practice even among fairly good farmers, its methodical use is quite the exception. The best Nebraska farmers are using it generally. The following order is much practiced. Corn followed by wheat or other small grains followed by alfalfa or clover, two years. Little commercial fertilizer is used, but in preparing for the corn crop, the land is heavily covered with manure from the stables or feeding yards. This once in four years with the alfalfa, is maintaining their fertility in fine shape, while producing heavy crops.

Education Has Done It.

Another item. Both Nebraska and Kansas have strong state colleges of agriculture which are well patronized by farmers' sons. While I was there Secy. Wilson of Washington gave an address to the university students at Lincoln in which he strongly depicted so many of the bright young men of the country preparing themselves for the overcrowded professions. He insisted that where there was one place waiting for a young man trained for a profession, there were a score desirable and remunerative, in agriculture, seeking young men of brains and special training.

But the feature that especially interested me was the popularity of the special sessions for practical farmers held during the winters. I found it was a common thing for well-to-do, middle-aged successful farmers to attend these practical schools.

In these briefly stated items it seems to me we have the explanation of the marvelous development in a brief time of that noted agricultural section of the great Middle West. Good lands and intelligent, practical farmers to commence with, prompt adoption of improved appliances, and progressive, scientific methods, scientific agricultural education of young men, and the spirit of keeping in touch with scientific investigation by the practical farmers.

Why to Canada?

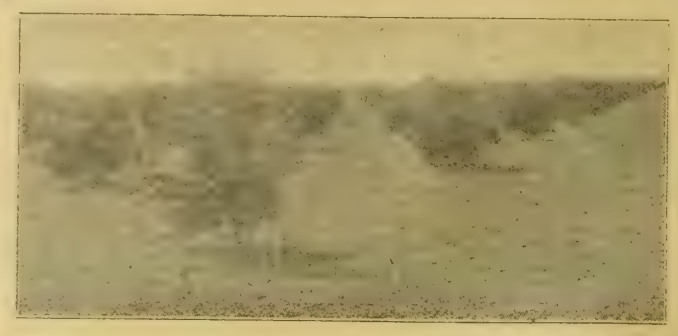
Now as to the early emigration from these prosperous states to Canada, of which we hear so much. I confess it had been difficult for me to understand. On the ground, it is not a hard problem. These large farmers require a good deal of help. This is largely of an intelligent, sturdy class of men, mostly from eastern farms, but including many of the better class of foreigners. With fair wages and low expense this farm help saves money, and they soon want land of their own. Prices there are now quite beyond their means, and naturally they seek lower priced lands.

Again, there are a large number of tenants on farms owned by large landlords. As they add farm to farm they secure the best available practical farmers to manage each. Many of these farm for a portion of the crops. Many of them are good farmers and accumulate, but not fast enough to buy the high-priced lands they are on. It is largely from these two classes that the successful farmers on the rich, cheap grain lands of western Canada are being recruited from our prosperous western states. They do not leave the United States because of any dissatisfaction, but because their limited money will provide them farms at once in the neighboring country.

Come to California.

That these intelligent farmers who have so quickly accumulated a competence should desire to find homes where they can enjoy their well-earned money under more favorable conditions than is possible on their isolated farms, is easily appreciated, and quite explains the migration of so many to near-by towns and cities.

Why many of them are finding their way to California and establishing delightful homes for their later years, can be appreciated best by those who have had some experience in the blizzards and zero weather of the long winters of that region, and then in this inviting climate.



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THINK WHAT THIS MEANS TO YOU. The average nursery is in business today and out tomorrow, so you have no recourse should anything go wrong. In addition to guaranteeing our trees true to name, we select our buds only from best individual fruiting trees, which would eliminate the possibility of having non-fruiting trees, or poor bearers in your grove. We follow the same plan of bud selection as the government experimental work.

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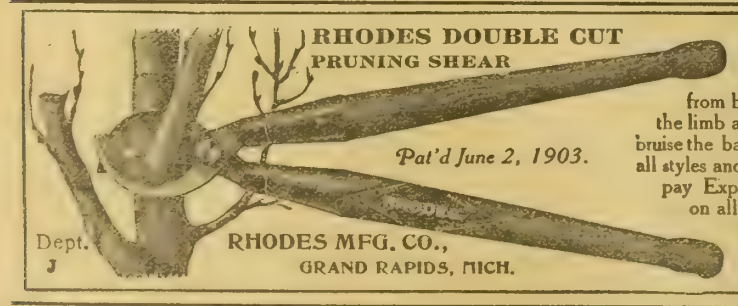

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Fifty Thousand High Grade Trees

SMITH AND CLARK COMPANY

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Citrus and Tropical Fruits

NITROGEN FERTILIZER FOR THE CITRUS ORCHARD.

By W. F. Sutherst, Ph. D., F. I. C.

Nitrogen is an essential ingredient of protoplasm, the substance contained in the living cells in the animal and vegetable kingdoms; a supply of this ingredient for the continued growth of cells is therefore necessary in the medium from which they absorb it. The cells composing the plant organs have different functions, and do not take up the same quantity of materials out of the sap. Some, such as the leaves, are capable of taking up a larger quantity of nitrogenous substance than the flower. When a large amount of nitrogen fertilizer is present in the soil we get a correspondingly large growth of leaf, and as other plant food ingredients are taken up as well, the rest of the plant, which needs them, suffers in consequence. Although a certain amount of leaf is necessary to manufacture vegetable matter for the plants' growth, still, in the case of fruit trees, where fruit is the object in view, an excess of leaf means loss to the grower. The orange contains just half as much nitrogen as the leaves or wood, so that a large application of nitrogenous fertilizer is unnecessary. In my opinion, the proportion of leaf to fruit in the orange tree is much greater than in other fruit trees, and in the case of evergreens it should be the reverse. A large leaf area means greater evaporation, and more frequent irrigation. Seeds store up considerable quantities of nitrogenous matter, and an orchard growing seedless oranges requires less nitrogen in consequence.

Nitrate of soda appears to be frequently used for citrus orchards, but there are numerous objections to its general use. For cereal and root crops it is largely used, but only as a tonic to tide the young crop over some setback, such as an insect attack, where a rapid growth for a short time will prevent the crop being entirely eaten up; another use is to overcome choking by weeds, but rarely as a continuous source of nitrogen. Being very soluble, it moves about readily in ground water, so that at one time tree roots are well supplied with it, at others it would be quite out of reach The evergreen citrus tree needs a constant supply of food, and consequently fertilizers constantly at hand. The soda in nitrate of soda is not needed in so great quantity by the plants as the nitrogen, so it passes out of the plant by the roots into the soil. Here it may unite with acids strong enough to neutralize it, or remain as "black alkali." The amount, however, is so small that it would take a long time to accumulate so as to be dangerous. By planting cabbages or other soda loving crops between the trees, it could be removed as fast as it formed.

The fertilizer next to nitrate of soda as regards efficiency is sulphate of ammonia. This apparently has not been used to any extent in citrus orchards, but in the Lomita High School experimental orchard it is on trial along with others. Sulphate of ammonia is slower in its action than nitrate of soda, and this is an advantage in evergreen trees, and though it is a very soluble salt, peculiarly enough, it does not move about with the soil water readily, but clings tenaciously to the soil particles. It first of all has to be converted by bacterial action into nitrate before the plants absorb it, and this only takes place in warm weather. As our rainy season is always during the coldest part of the year, when this action is arrested, practically all remains in the soil, whereas nitrate of soda would be washed away. There is no chance of alkali being formed by its use, as sulphuric acid is the rejected part of the salt, and this unites with the lime of the soil, forming a harmless substance.

It has not yet been proved that sulphate of ammonia is the ideal for citrus trees, so other fertilizers should be tried. One of these, dried blood, apears to have everything in its favor. It has to undergo considerable change before the plants can take it up, consequently is slow acting, much slower than sulphate of ammonia, and then it makes an excellent medium for bacteria to grow in. The bacteriologist uses meat broth to develop his specimens in, and dried blood, when dampened in the soil, is practically equivalent to it. We are aware that bacteria are necessary in the soil to convert complicated matter into plant food, and here is a substance to encourage their propagation, besides supplying humus to improve the mechanical condition of the soil. Neither of these are supplied by the chemical fertilizers. Wool and horn refuse are too slow acting to be of any use, and should only be applied when obtainable for nothing.

In mixed fertilizers it is desirable that all the ingredients be taken up at the same rate, or be of the same availability. This is impossible when nitrate, superphosphate and such substances are present, when one is liable to be washed out at the first rainfall, and the others are so slow acting as to last for years. This must be the cause of nonsuccess observed in many orchards where everything else seems to be in their favor.

Choose, then, some nitrogen fertilizer of a slow acting nature, not likely to be washed out of the soil, nor to bring about an abnormal growth when not required.

CITRUS TARIFF FACTS.

California is shipping 18,000,000 boxes of citrus fruits in 1911.

This fruit is produced by 10,000 farmers.

The citrus industry supports 150,000 people who are large consumers of the products of other states.

Fine California Seedless Navels, now eaten by everybody, are selling for $1.00 a box less than the seedlings formerly imported.

Fine, good-keeping California lemons are selling for less than imported lemons of four or five years ago. As the California lemon industry develops and the supply increases, the prices will be still lower because citrus fruits are perishable and must be sold.

As the cost of production consists largely of labor, the California citrus industry could not have developed without a tariff duty to equalize the cost of labor in this country and abroad.

This industry is the best illustration of the benefits of a protective tariff; it supports 150,000 people; it furnishes an important article of food for all of

the people; it has greatly improved the quality and has reduced the prices that prevailed when the consumer was furnished with imported fruit alone.

Without California competition the orange and lemon business would be in the hands of a small group of New York importers now combined with a small group in Italy to break down the home industry, and when so broken, to increase the price of lemons.

For the first time in American history foreign exporters have openly and brazenly organized, raised an immense slush fund and tried to break down an industry which is supporting an army of American people.

For the first time an organized foreign trust has had the audacity to attempt to corruptly shape legislation in the United States. What the trust would do if successful is shown by the price of lemons in Canada where there is no duty and where the retail price is as high as in this country.

Should they succeed in killing the industry in California they would make prices from day to day and the consumer would pay a higher price for a poorer quality of fruit.

During the heat of this summer when the importers in New York were reshipping the Italian lemons from New York to Europe to advance home prices, California shipped 1,000,000 boxes to the East and compelled a reduction of $3.00 a box between June and August.

Without this contribution from California prices would have soared to $10.00 or $12.50 a box, as did occur each year before California had a sufficient crop to compete, and the importers would have wrung millions of dollars from the suffering public.

The average wholesale price of Italian lemons in New York in August, 1911, was $2.60 per box, or less than 10 cents per dozen. The average wholesale price during August, 1910, when the importers had more complete control of the eastern market, was $3.67 per box.

SEEDLESS LEMONS.

Some time ago the daily press chronicled the discovery of seedless lemons at Rialto, San Bernardino County, hailing it as "a discovery of world wide importance, for it means that in years to come the lemon groves of California, and probably Europe, will be seedless." This started people in towns and cities to investigating their dooryard lemon trees, and since that time "seedless lemons" have been given prominent place on front page of the daily press. Since the introduction of lemons into California, seedless lemons have been produced. They are perhaps more common with the Eureka than other varieties, the Lisbon being quite seedy, but a good vigorous Eureka lemon tree will produce fruit of sufficient size so that it is picked entirely green and is usually seedless or contains only unmatured or partially formed seeds.

The Cultivator would not discourage looking for more perfect lemons, but investigators should bear in mind that more than a seedless lemon is required. Mr. C. H. Brown left at this office specimens of lemons which were practically seedless, others only partially formed. The fruit appeared to be from two different trees, one having largely the appearance of the sweet lime, the other being very large and an orange shaped fruit, juicy and valuable for home use, but it would not grade high because of its shape.

Don't give too many folks a piece of your mind. You may have none left for yourself.

FAITHFUL WORK.

The California Fruit Growers Exchange showed its appreciation of nearly a score of years of faithful service in that great cooperative organization when it passed resolutions regarding Earl F. Van Luven, of Rialto. After referring to his work, and the fact that Mr. Van Luven was one of the first members of the association and worked hard for the organization when the citrus industry was far from what it is at the present time, the board resolved:

"That this board of directors deeply regrets the severance of these relations that have existed so pleasantly and harmoniously throughout these many years, and recognizes that in the withdrawal of Mr. Van Luven it loses one of its most willing, efficient, staunch and able members."

NATIONAL QUARANTINE.

By A. W. Morrill, Entomologist Arizona Horticultural Commission.

The United States has been most fortunate in not having introduced and established within the country three fruit pests which are unquestionably far more serious than anything in this line we now have to contend with. These are so-called fruit flies and are commonly known as the Mexican orange maggot, the Mediterranean fruit fly and the melon fly. The first attacks the fruit of the orange, guava and mango; the second attacks practically every kind of fruit, being especially fond of citrus and stone fruits; the third attacks melons, cucumbers, tomatoes, beans and some fruits. The first occurs in Mexico, and the second and third are found in many parts of the world. The last two are of especial interest to western fruit growers, since they are found in the Hawaiian Islands.

That these fruit flies have not yet gained entrance to this country is largely due to the efforts of the California Commission of Horticulture. In the absence of a national quarantine and inspection law, such as practically all the leading foreign governments have in effect, California has had on its hands the work of self protection which has incidentally protected the entire country against insect pests arriving at California ports from the Territory of Hawaii and from foreign countries.

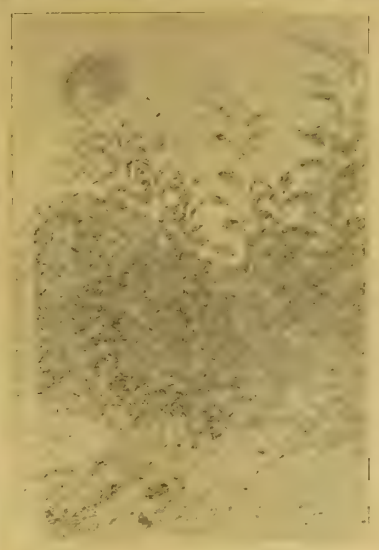
The fruit growers of California are greatly concerned at the menace to their great industry. In a circular recently issued by the California State Commission of Horticulture, Mr. O. E. Bremner, the secretary of the commission, summarizes the danger as follows:

"It is plain that shippers of fruit and those directly or indirectly interested in this industry, will not be guilty of in any way causing its establishment. The danger, therefore, lies with the unacquainted, unthinking, traveling public, who, in making a pleasure trip to the Orient, will bring in fruit to their friends, or for their own use.

We, therefore, solicit the aid of all of those interested to join with us in sounding at once a note of warning that may avert the catastrophe which seems imminent."

In writing of the melon fly Mr. Bremner states that in a single tomato from a shipment which he examined at San Francisco at the qaurantine station he counted seventy-nine maggots. In Hawaii, in July, 1902, he found that watermelons were selling for a dollar apiece owing to the difficulty in growing them successfully and protecting them against the maggots.

(Continued on Page 566.)



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First quality trees will be scarce in 1912

The man who plants an orange or lemon grove is planting for a lifetime. Poor trees cannot be considered at any price if he wants good results. A few cents per tree saved at time of purchase often costs dollars per tree in after years.

Why not buy the best? The quality is there and remains long after the price is forgotten. We offer a limited quantity of strictly first-class, healthy trees, one year old buds, for 1912:

6500 Eureka Lemons
2000 Villa Franca Lemons
9000 Washington Navels
750 Valencias
500 Marsh Seedles Grape Fruit

Budded on sour stock roots, grown in loose soil, clean, vigorous trees, guaranteed true to name. These trees have been carefully grown, are straight, and extra care was taken in selecting buds from the best fruiting trees, the parent stock which is of proven prolific habit—thus insuring good bearing trees.

Longer life through seed and bud selection. The above cut shows what these trees were at the time of budding, October, 1910, measuring four to five feet high. The trees now show for themselves. A large portion of them measure from five-eighths of an inch to three-quarters of an inch and have been pronounced by experts to be the finest bunch of one year trees they have ever seen.

We invite inspection and comparison, and solicit correspondence. We will sell these trees at current prices. We will refund traveling expenses to any out of town purchasers. Twenty years experience in expert citrus horticultural work.

Dewey-Greenleaf Citrus Nursery

Telephone Chas. Dewey, residence phone "Sunset 113 R." | Twenty-sixth and Mountain Ave., Upland, San Bernardino County, Cal.

N. B.—These trees will pass inspection—no scrubbing.

Good Citrus Trees

Expert grown, large, clean stock, up to size now, for 1912 spring delivery. None better anywhere. Our buds are selected with greatest care from best individual fruiting trees and positively guaranteed true to name.

250,000 Seed Bed Stock

Sour, Sweet or Pomelo—the ***McMillan grown*** kind—large clean plants from selected seed—the kind it pays to plant. Inspection and correspondence invited. Closest nursery to Los Angeles. Alhambra car.

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High Grade Citrus Trees

Selected Buds on Vigorous Roots

Our trees always prove true. Send for Catalog.
Place orders early and get choice stock.

POLLARD BROS.

Alhambra Ex.
Main 13, or Black 183

Corner Mission Street and Los Robles Ave.

South Pasadena, California

EXCELSIOR TREE SUPPORT

Hooks are made of Flat Steel, 1¼ Inches Wide—6ft. of Wire.

Makes Propping Unnecessary
Insures Branches Against Breaking
Lifts the Lower Limbs
Makes the Fruit Grade Higher

Guaranteed to hold 250 lbs. Hooks swing on themselves and not on the limbs. Cannot bind the limbs.

Price: $12.50 per 1000 hooks
Wire extra. F. O. B. Pomona, California.

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Also a million rooted grape vines; a few thousand nice Orange and Lemon trees, and a lot of No. 1 Eucalyptus.

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Citrus Trees for Spring Planting

For 1912

9000 Late Valencias 5000 Washington Navels

11000 Eureka Lemons

The trees are yearling buds on Florida Sour Stock, of thrifty growth and free from scale.

O. HANDY, Phone 33 Y 2 1-2 Miles N. E. of Plaza ORANGE, CALIFORNIA

Deciduous Fruit Culture

CALIFORNIA NURSERYMEN.

The first fall meeting of the new organization of the California Association of Nurserymen came to a tragic close in the Chamber of Commerce building, Los Angeles, last Friday evening. The closing hour had arrived, and a woman over enthusiastic as to the issue of saloon or no saloon in the city of Los Angeles, asked for the privilege of one moment's talk. Apparently she did not understand that this was a state convention and not a meeting of local people, as she appealed to those present to vote against the Los Angeles saloon. As she was finishing, one of the folding chairs, according to the custom of its kind, collapsed, happening to be occupied by Mr. Biers, and Mr. Biers went down with a crash that was heard out upon the street. Mr. Biers arose and sedately inquired, "Wouldn't that jar you?" It apparently had him and created great merriment on the part of the assembled nurserymen.

There had been two days of strenuous work on the part of the members of the association and much had been accomplished which will be of value to the nursery and fruit interests of the state, and the evening was given over to a jolly theater party in which nearly all members joined, as guests of the California Cultivator and the Rural Californian. With Mr. Thomas in the lead, over fifty members marched into the Orpheum and showed the assembled people fifty of the yellow badges of the association. It was a pleasant ending of the two days' hard work.

We say it was a pleasant ending, and yet the next, the third and last day of the convention, was perhaps the pleasantest of all. It consisted of an automobile ride given to members by the Los Angeles nurserymen. It included visits to most of the nurseries around Los Angeles and Pasadena, and a trip through the magnificent grounds of Mr. Henry E. Huntington, east of the city of Los Angeles. These grounds cover over 400 acres with hill, valley and tableland, so arranged as to make magnificent landscape opportunities. Noontime found the bunch at Howard & Smith's Nurseries at Montebello, where lunch was served and where good fellowship held full sway for a part of the afternoon. The crowd broke with three cheers and a tiger for Los Angeles entertainers, and it was decided that if Oakland, the next place of meeting, hit the same gait Los Angeles has, the next session would be such as to attract nurserymen from all parts of the state.

But to go back a bit to the discussions in the Chamber of Commerce rooms. The principal feature of the convention was the resolution favoring a national quarantine. There was a little difference of opinion as to the particulars of enforcing a national quarantine, but on the one general proposition that a national law should be passed, there was absolutely no difference of opinion. With California producing from one hundred thirty to one hundred fifty millions of dollars worth of fruit every year, it is readily seen what a quarantine which is effective means to this state. There has been maintained a most thorough state quarantine which has been aided materially by the co-operation of custom service of the government, but the power of the state quarantine officers is not sufficient. It is notorious that Florida nurserymen use every means to send their goods to this state. They claim for them, of course, that they are free from any whitefly pest, but the State Commissioner of Horticulture has ruled that nothing shall be received in this state from those nurseries. Notwithstanding that, the postal department will not recognize the authority of state inspectors to any way hamper the free delivery through the mails of anything Florida sees fit to send. A national quarantine law would be effective as to receiving living plants from foreign countries and would also control interstate shipments of nursery stock. Many of the eastern nurserymen are fighting the national law. It will take united effort on the part of Californians to bring it about. The Cultivator will treat of this more fully in a later issue.

Considerable spirit was shown in the discussion of state and county quarantine, but with it all, good nature prevailed, and while nurserymen felt that there had been cases of discrimination and even the manifestation of ignorance on the part of many so-called inspectors, yet the general opinion was that the work of county and state inspectors should be sustained.

Many were greatly disappointed in the failure of Luther Burbank to appear before the convention. He was appealed to by wire and in every possible way pressure brought to bear to get him here, but he is a busy man.

Mr. Reeves' most complete list of conifers which have done well in California was discussed, and this list which had previously been given to the Southern California Horticultural Society, will appear in full in a later Cultivator.

In the matter of buying and selling amongst nurserymen, there was a little feeling expressed on the part of the Southern California citrus and ornamental tree growers because deciduous growers only allowed 20 per cent discount from list prices. They asserted this was not a sufficient discount to handle the goods and make any profit whatever. Some asserted that it meant almost certain loss to handle on such a narrow margin. The northern growers came back with the claim that if 20 per cent was not sufficient on deciduous stock, certainly 10 per cent, which is all the northern growers are granting on citrus stock, was not sufficient.

As noted above, the strongest resolution introduced was that referring to national quarantine, and among others were the usual expressions of appreciation to Los Angeles nurserymen as entertainers, to the press, the officers and others, for courtesies extended. All told, it was a royal meeting and every visitor felt well repaid for the visit.

The officers elected for the coming year are the temporary officers who perfected the organization and are as follows: President, W. V. Eberly, Niles; vice presidents, Leonard Coates, Morgan Hill; F. H. Wilson, Fresno; Fred H. Howard, Los Angeles; Almon Wheeler, San Jose; Thos. Chisholm, Pasadena; executive committee, Max J. Crow, Gilroy; E. Wightman, Chico; C. W. Howard, Hemet; secretary-treasurer, H. W. Krukeberg, Los Angeles.

EXPORTS OF RAISINS.

More than one milion dollars' worth of raisins were exported from the United States in the last fiscal year, the quantity, 18½ million pounds, being far in excess of the total exported in any earlier year. The imports during the year amounted to only 2½ million pounds, against 10 million pounds in 1900, and as high as 50 million pounds in certain years prior to the development of production in the United States. Comparing 1911 with 1900, the figures of the Bureau of Statistics, Department of Commerce and Labor show that exports grew from 2½ million pounds to over 18½ million pounds, and their value, from $140,000 to $1,069,000. During the same period imports of raisins fell from 10 1-3 million pounds in 1900 to 2½ million in 1911, and their value from $531,000 to $237,000. The largest exportation of raisins recorded in any year prior to 1911 was that of 1907, a little over 9 million pounds, or less than half that of 1911, while the largest importation of raisins on record is that of 1884, when a total of 54 million pounds entered the country, as against but 2½ million pounds in the fiscal year 1911.

Canada is by far the largest market for American raisins exported, the exports thereto in the fiscal year 1911 having been 11 million pounds, compared with less than three million to New Zealand, about 1 million each to England and Germany, and 3 million pounds to all other parts of the world. Of the 2½ million pounds imported last year, Spain, England, Asiatic Russia, and Asiatic Turkey were the chief sources, the first named country being credited with over 1 million pounds, and the others less than a half million pounds each. These figures contrast with those of 1884 when of nearly 54 million pounds of raisins imported, Spain was credited with 47½ million pounds; England, 3½ million; and Italy, nearly 2 million pounds.

The marked falling off in importations of raisins is the result of the rapid increase in domestic production, which first attained commercial importance in early "seventies." The American raisin industry had its beginning in the great San Joaquin Valley and certain counties of Southern California, which is still the chief producing area in the United States. In 1873 the California crop was but 120,000 pounds; by 1880 it had grown to 1,500,000 pounds; by 1890, 38,000,000 pounds; by 1900, to 90,000,000 pounds, and in the later years has risen as high as 140,000,000 pounds in 1907 and 1909, and fallen as low as 75,000,000 pounds in 1904, the figures for 1910 being 112,000,000 pounds. These figures of production are supplied by Mr. George Robertson, statistician of Fresno County, California, and are here quoted in the absence of official data covering the production in the United States as a whole.

The effect of domestic production upon imports and exports of raisins is clearly set forth in the figures which follow:

Period	Av. annual production (a) pounds	Av. annual importation pounds	Av. annual exportation pounds
1873-1881	780,000	35,300,000	.....
1882-1891	17,700,000	41,900,000	.....
1892-1901	81,200,000	12,700,000	(b) 3,400,000
1902-1910	111,660,000	6,700,000	5,900,000
1911	No data	2,500,000	18,700,000

(a) California crop only. (b) 1898-1901.

While these figures suggest a growing consumption of raisins in the United States, the per capita consumption is still but one-third as large as in the United Kingdom, Mr. George Robertson, the statistician above mentioned, being authority for the statement that the per capita consumption of raisins in the United States in 1910 was but 1½ pounds, compared with 5 pounds in the United Kingdom. Dr. Josiah Oldfield, D.C.L., Oxford, places raisins first among all known foods and superior to grapes "because the sugar has been thoroughly matured and ripened, and transformed ready for digestion."

The year 1910 was one of short production of raisins throughout the world. In 1909, when conditions were normal, four leading sources produced 333,000 long tons, of which Greek currants represented 185,000 tons; California raisins, 70,000; Turkish sultanas, 50,000 tons; and Spain, 28,000. Australia's product is mostly consumed in the home market, but the output is increasing.

EAT PLENTY OF GRAPES.

Eat grapes, ripe, sound ones, in abundance. Many people can make a whole breakfast off them and nothing else and feel the better for it. Don't be afraid of them. The grape-cure in Europe frequently causes a man's dyspepsia and dumps to flee away forever, and he feels as though he were made over again and were walking on air. It will do the same in America.

If anything is certain, it is that the food of civilization is changing somewhat, particularly in America. The heavy, stuffy, greasy foods of our ancestors are giving way to those which are lighter, more quickly digested. The American cannot afford to spend six hours digesting his dinner when he wants all the blood he can get for use in his brain to invent new machines, to write, or to plan commercial enterprises. Life is too short to give so many of the twenty-four hours up to the stomach.

Therefore, fruit, and a quantity of it, takes the place of sausage, "biled diners," mince pie, and green pork, or even the time-honored sheet-iron sandwich. 'Tis well. Man's stomach thanks him. The attention of economists, too, is recently called more and more to the limitless possibilities for food of the best quality for man that lie in nut culture.

HEALTHFULNESS OF APPLES.

Professor J. T. Stinson, director of pomology at the St. Louis fair, claims that the liberal use of apples will improve the disposition and elevate the moral nature, removing disagreeable feelings and making existence more enjoyable for all. He also maintains that eating raw apples is a cure for alcoholism and the tobacco habit. If all that he claims for the apple is true, the professor must certainly be regarded as a public benefactor. Dr. J. H. Kellogg thinks is would be a good thing for most persons if they would have a periodical "apple day," when the diet should be exclusively apples. Those who find themselves becoming irritable and disagreeable, might at least try this means of sweetening their disposition. Often they will relieve a distressed condition of the stomach. In case of mental fatigue, they are a wonderful tonic. We have made a lunch on apples and, while they do not have staying qualities, an occasional practice of this will be found beneficial generally. Apples in some form should be on the table at all times.—Green's Fruit Grower.

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General Agriculture

MARKETING GRAIN AND LIVE STOCK IN THE PACIFIC COAST REGION.

The Pacific coast states ship their surplus grain to Europe rather than to the large markets of the Mississippi Valley; for the freight charges on the 19,000-mile voyage around South America are less than the railroad rates for a haul of some 2000 miles across the mountains and plains in the United States. In the first part of 1910, the cost of sending wheat from Spokane or Walla Walla to Liverpool, including railroad rates to Portland or Puget Sound, ocean rates, and marine insurance, ranged from 25 to about 30 cents a bushel, while the rate to Chicago from Spokane or Walla Walla was 34.5 cents a bushel.

The Pacific States thus occupy a unique position in the grain trade of the United States, and to some extent, in the live stock industry also, a position which no doubt will be changed after the opening of the Panama Canal affords new lines of transportation.

The present status and historic development of the grain and live stock industries of these states are discussed in a recent bulletin issued by the United States Department of Agriculture. The publication is entitled "Marketing Grain and Live Stock in the Pacific Coast Region."

Wheat growing in California developed with the large increase in population which followed the discovery of gold; the wheat crop in 1849 was about 17,000 bushels, and in 1859 it had reached nearly 6,000,000 bushels. Exports of wheat began in the early 50's; the annual average of exports from San Francisco for 1856-60 amounted to 400,000 bushels, including the wheat used to make the exported flour. The zenith of the wheat exports from California was reached in 1881-85, when their yearly average was 30,000,000 bushels. In 1906-10 this trade had declined to about 1,700,000 bushels, most of which was exported as flour. But meantime the Pacific Northwest had been increasing its crops so that the total exports of wheat (including flour reduced to terms of grain) amounted to 29,000,000 bushels a year from the Pacific coast during 1906-10. The development of California's agriculture along more profitable lines is one cause of the decline of its wheat production, and the increasing population providing a larger home market reduces still further the surplus for export.

A striking feature of the grain industry of the Pacific coast is the relatively high prices paid to farmers in regions of small production as compared with the farm prices in those regions which furnish the bulk of the crop. The average farm prices for wheat for two years ending with June, 1910, ranged from 81 cents a bushel in the valleys of the upper Columbia and the Snake rivers, to $1.28 for the mountain counties of eastern California, where but little wheat is raised.

Another comparison made in this bulletin shows a vast difference in the cost per ton-mile for transporting wheat, by different carriers, all of which share in moving this product to market. It costs a Pacific coast farmer an average of 20 to 25 cents per ton-mile to haul his wheat to the shipping point, while the freight rate over the route to England by way of Cape Horn is only from .02 to .03 of 1 cent per ton-mile.

The live stock industry of the Pacific coast is much older than the grain farming, being one of the main supports of California for at least half a century before the discovery of gold in 1848. But when crowds began to enter the state in the early 50's, the home supply was too small and cattle and sheep were brought in from distant places. Texas and even Missouri contributed to the herds and flocks that were driven across the mountains and deserts to the river valleys of California.

The usual method of buying live stock, at the present time, west of the Rocky Mountains, is direct from the stock grower. The purchaser is often a packer who buys for his own slaughtering. There is some marketing done in public stock yards, notably at Portland.

Details of the growth of domestic and foreign trade, of prices on the farm and in various markets, of freight rates, and transport facilities are brought out in the statistical tables of the bulletin.

IMPORTS OF POTASH SALTS IN THE UNITED STATES.

The recent announcement by the Department of Agriculture and from other sources regarding discoveries of large supplies of potash in the United States, lends interest to a statement prepared by the Bureau of Statistics, Department of Commerce and Labor, showing that the importation of potash salts is now running at the rate of over a million dollars a month and has aggregated since 1900 approximately 75 million dollars. While these potash salts enter the country in various forms and thus under various titles, including muriate of potash, sulphate of potash, carbonate of potash, kainit, etc., their aggregate import value in the nine months ending with September, 1911, was 11½ million dollars, against about 7 million in the corresponding months of 1910 and a little over 5 million in the corresponding months of 1909, thus indicating a steady and rapid growth in the importaion of this class of products. Taking the figures for fiscal years, the total for 1911 was 14 million dollars, compared with less than 12 million in 1910, less than 4 million in 1900 and less than two million in 1890.

The principal classes of potash salts imported into the United States are, in the order of magnitude of imports in the fiscal year 1911: kainit, 1300 million pounds; muriate of potash, 431 million pounds; sulphate of potash, 106 million pounds; carbonate of potash, 23 million pounds; nitrate of potash, or crude saltpeter, 9 million pounds; caustic potash, 7 million pounds; and all other salts of potash, 6 million pounds. Measured by value the largest importations during the year occurred in the muriate, 6½ million dollars; kainit, 2 2-3 million; the sulphate, nearly 2 million; and the carbonate, ¾ million dollars.

American farms absorb a large proportion of the imported potash salts, most of which are valuable as fertilizers by reason of their large content of potash. This is especially true of kainit, muriate of potash, and the sulphate of potash. Nitrate of potash, or crude saltpeter, is chiefly used in the

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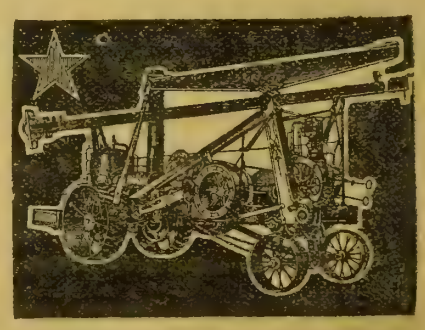

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manufacture of gunpowder and nitric acid; caustic potash, in the manufacture of soap; and carbonate of potash, or "potash," as popularly called, obtained largely from the ashes of certain land and marine plants, is used in the manufacture of soft soap, for cleansing purposes, in dyeing, and for the emulsifying of oils; while the chemical and other industries utilize the foregoing and other potash salts in the preparation of drugs and medicines and in other technical processes.

Germany is the chief source of kainit, and, indeed, of all the imported potash salts except crude saltpeter. Of the muriate imported in 1911, 431 million pounds, Germany supplied all except 3¼ million pounds received from Belgium and 1½ million pounds from the United Kingdom, most of which was, in each case, presumably, of German origin. Practically all the imports of sulphate of potash are from Germany, and of the 23 million pounds of carbonate of potash imported in the last fiscal year, Germany is credited with 16 million pounds, compared with less than half that sum from all other European countries. In the case of nitrate of potash, or crude saltpeter, however, British India is the chief source, that country being credited with over 9 million pounds out of a total importation of 9¼ million pounds in the fiscal year which ended June 30, 1911.

CANADA THISTLE.

One of the worst weeds in the state of Washington is the Canada thistle. This plant is distinguished from the common bull thistle by its small heads and its long, running underground stems. The bull thistle comes up from the seed, lives over one winter, produces flowers and seeds the second year and then dies. The Canada thistle lives on from year to year, sending up new shoots from the underground parts, storing up new food below ground and thus establishing itself very firmly. Fortunately very few good seeds are produced and the weed does not spread to any great extent from place to place by seed. Only occasionally is a new start made. It does, however, spread from a center in every direction in a field, as the underground stems grow, and a small piece of one of these stems dragged by a plow or cultivator will start a piece in another part of the field.

To eradicate this weed requires careful effort. First of all, every sign of it must be hoed out and all the underground stems removed that may be. The plot must then be carefully watched, and as fast as new stems come up they must be hoed off. The sending up of a stem uses some of the food which is stored below ground. If this stem is removed before it can establish itself, spread out its leaves to the sunlight and manufacture new food, in time the underground stems will be starved out, but if the new shoots are neglected more food will be manufactured and stored, and the whole fight must be begun again. If this work is carried out with great care one should be able to eradicate the thistle in a single growing season. —Bul. 3, Washington State Ag. Ex. Sta.

A NITROGENOUS FERTILIZER.

A subscriber in Brighton, Colorado, wishes to use a nitrogenous liquid fertilizer, and asks about sulphate of ammonia. Sulphate of ammonia is readily soluble in water, and may be used by adding a teaspoonful of sulphate to a gallon of water. Avoid applying it too often. Perhaps a better liquid fertilizer is made by adding a teaspoonful of nitrate of soda to a gallon of water. The nitrate is also soluble in water, and supplies nitrogen that is at once available for use by the plants. It does not unite with the other chemicals in the soil, and in consequence is liable by over-watering to be washed out through the drainage hole at the bottom. Both of these articles are in concentrated form, and before dilution must not be allowed to come in contact with the roots or stalks, as this would be injurious to them. It should be applied in small quantities, and its effect will be seen within a day or two. It should be borne in mind that these nitrogenous manures, when used, tend to produce foliage rather than flowers or fruit, especially when the soil is lacking in lime and other mineral elements. In such cases bone meal is advantageously used, being mixed with the surface soil before the liquid is applied. While making use of these concentrated manures, it is well to bear in mind that if applied too strong or too freely, they are liable to do more harm than good. It is far better to err in using too little than in using too much of these fertilizers.—Ex.

RUSSIAN THISTLE.

(Salsola kali tragus.)

The Russian thistle (Salsola kali tragus), is not a true thistle, but is a tumble weed. It entered the state of Washington about 15 years ago and has not been very rapidly distributed. It, however, occurs in some places on the summer fallows and in other places to a considerable extent in waste land. In a few cases it is making trouble in wheat fields.

The Russian thistle is an annual, that is, it goes to seed each year and then dies down. Fortunately, it makes its flowers and seed late in the summer after the grain crop has been removed. It should be prevented from going to seed by being cut after the grain has been taken off. If it is allowed to go to seed, the piles of weeds should be burned and the young weeds killed by clean cultivation.

Live stock, especially sheep, eat the weed freely while it is young and thrive well on it.

There is no great difficulty in eradicating this weed if reasonable care is taken.—Bul. 6 of Wash. Ex. Sta.

ENFORCING SQUIRREL EXTERMINATION.

From Assistant Secretary of the State Board of Health, John F. Leineu, we have the following concerning procedure necessary to secure enforcement of the squirrel extermination act:

"County Board of Supervisors must be formally requested to enforce this law and to take all necessary measures to fully notify all landowners in their respective counties of their intention to enforce it. In view of the wording of the act, it might be well for you to communicate with your county officials direct. The state board of health would also like to hear from you further concerning these matters.

"It is also suggested that you communicate with P. A. Surgeon W. C. Rucker, 111 New Montgomery St., San Francisco, who has charge of plague eradicative measures and squirrel extermination on the Pacific Coast."

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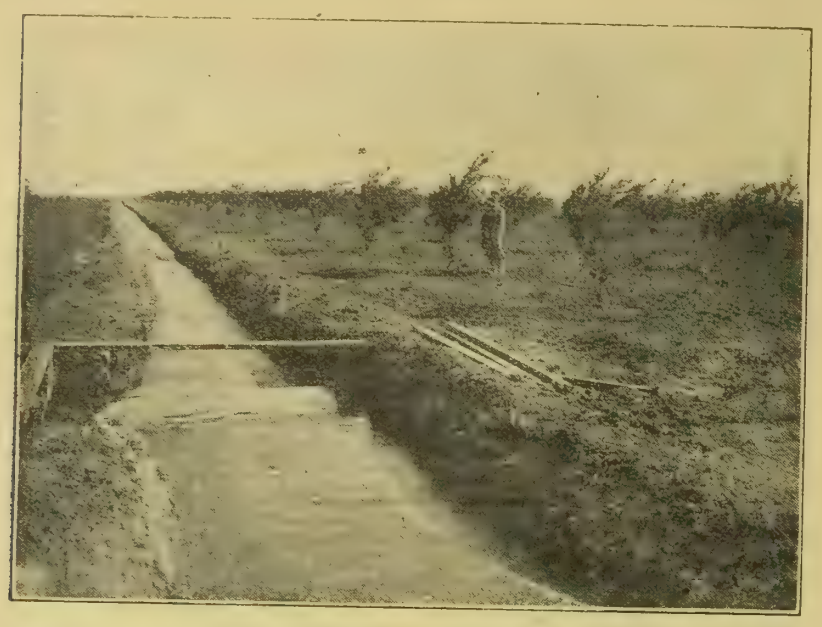
The picture occupying the front page of this issue of the Cultivator, is a photographic reproduction of a section of the main canal of the irrigating plant which furnishes the water for the Patterson Irrigated Farms, at



Patterson, Stanislaus County, California. This irrigating system is what is known by irrigation engineers as "a pumping plant." In other words, the water for these canals is elevated from the San Joaquin River by powerful centrifugal pumps, operated by electric power which in turn, is supplied by water power in the Sierra Nevadas and is produced at a very cheap rate.

There are five of the main canals having a total length of over five miles. There are also five separate pumping stations which in turn elevate the water to the next canal. At the end of each canal is a solid concrete reservoir, the combined capacity of which is over 5,000,000 gallons. These reserovirs operate as a storage reserve of water which can be pumped into the canals during the night in the irrigating season and drawn against during the day time to supplement the work of the pumps.

The canals and pumping plants were designed and installed of a size and capacity to supply more than an ample supply of water for all the land under irrigation. The canals are of solid concrete, twenty-six feet wide at the top and tapering to a point at the bottom. They are, without the shadow of contradiction, the finest irrigation canals in this country. Their construction does away entirely with the troubles that beset the ordinary type of irrigating canals such as the growth of obnoxious weeds, the boring of gophers which causes the dreaded and expensive washouts, the continual repairs, etc., that are continually required to keep the "mud-ditch" in operation.

Patterson is situated on the main line of the Southern Pacific railroad, ninety-seven miles south of San Francisco on the San Joaquin River. It is comparatively a new town, but is growing very rapidly as the result of the subdividing and sale of the great Patterson wheat ranch at that point.

This great tract of over 18,000 acres of wonderfully rich land lies along the San Joaquin River in the heart of the beautiful and fertile San Joaquin Valley, about midway between the Coast Range and the river. The history of the wonderful transformation scene now taking place there reads like a page taken from one of the fairy tales which delighted us when we were children. Eighteen months ago this tract was one vast wheat field, with not a building in sight except a few ranch houses. The site of the present modern station of the Southern Pacific Railway was marked by a post with a small sign reading, "Patterson," and was merely a flag station where local trains stopped when flagged to let off or take on the people who worked on the different great wheat ranches in the vicinity.

At the present time there is being built a modern city, with paved streets, concrete sidewalks, a $25,000 school building, a $20,000 bank, a $20,000 hotel, many good stores and scores of dwelling houses, some of which cost up into the thousands of dollars to construct. There is a complete water system for domestic use and fire protection and the streets are filled with building material and mechanics of every kind. Everything is on the move and the spirit of doing things seems to take hold of every person who is in any way connected with the place.

The same thing applies to the colony as well. Nearly two hundred families are now located on the tract and are busily engaged in either building homes, planting orchards or seeding the land to alfalfa. Several thousands of acres are now being seeded to this money-making crop and six months from this date the bare fields of stubble will be transformed to a vast carpet of nature's most glorious green.

Patterson is delightfully located, being midway between the mountains of the Coast Range and the river, or to be exact, three miles from each. The land is very level, having a perfect slope of eighteen fet to the mile from the mountains to the river, thereby making it an ideal irrigation proposition. The mountains here are beautiful, changing daily as the result of different atmospheric conditions, and are filled with valleys and canyons which abound in small game and are the mecca of hunters from different parts of the state.

The river at this point is also a continual delight, not only on account of the immense groves of great oak and willow trees but also owing to the picturesque scenery along its banks. Its waters teem with fish of many kinds including the striped bass and salmon, and appeal especially to many for that reason, as boating or fishing is a favorite pastime with many of the people.

A most beautiful grove of California oaks, covering many hundreds of acres along the river's bank, has been set aside by Mr. Patterson, the owner, for the exclusive use of the residents of Patterson city and colony. It is a magnificent gift and will be a source of pleasure, not only to the pioneers of the present generation, but to their descendants for all time to come.

The San Joaquin River is one of the great rivers of California and furnishes a never failing water supply for the Patterson irrigated farms. It has its source in the eternal snow fields of the mighty Sierra Nevadas and is supplemented by the hundreds of smaller streams that drain that great watershed. This river supplies the one essential necessary to make the rich soil of this valley produce the enormous crops of grain, fruits and alfalfa which have made California the wonderland of this hemisphere.

This is not only the age of irrigation, but it is also the age of intense farming. Without irrigation this valley produces one immense crop of wheat or barley. With irrigation the same land will produce from six to eight crops of alfalfa and all kinds of fruits and nuts which reach their highest state of perfection on this coast.

Both the soil and climate of this particular part of the San Joaquin Valley are especially adapted to the cultivation and production of the very best quality of the English walnut, which will be made one of the leading industries by the colonists of this place. The fact that the trees can be planted on the "water checks" and not interfere with the growing of alfalfa during the time that the trees are reaching the age of full bearing, appeals strongly to the small farmer. In this way the alfalfa will not only pay for the land itself, but will also take care of the evpense of the planting and raising of the walnut orchard as well.

You will notice from one of the accompanying pictures the remarkable growth of an apricot orchard in one year. It is pronounced by experts in that line to be the greatest single year's growth ever shown in this state of wonderful growths. Apples, prunes, pears, peaches, plums and berries of all kinds, show the same remarkable growth and a fine orange grove planted last year looks as sturdy and promising as anything shown in the lower part of the state.

The irrigation system at Patterson cost more than a quarter of a million dollars and after its completion the eighteen thousand acres of great wheat ranch was subdivided into five, ten and twenty-acre tracts which are being rapidly sold for fruit and alfalfa farms. Many of the leading dairymen of the state are buying large holdings there, knowing that just as soon as the water was turned onto that rich soil there would be no superior place in the country in which to make money raising alfalfa and turning it into butter fat.

One of the most important things concerning the rapid sale and development of the Patterson farms is the fact that the water is sold with the land. That is, one share of stock in the irrigation project is deeded with every acre of land sold. For example, a person buying twenty acres of land would receive twenty shares of stock in the irrigation plant. When the land is two-thirds paid for, the control and management passes into the hands of the farmers on the colony, and the cost of water is simply the upkeep and operation of the system, which under its perfect construction and cheapness of maintenance will be very reasonable, indeed.

The Payne Investment Company are the selling agents, with offices at Patterson, and they are meeting with great success in their manner of making the sales. The very easy terms they are able to give to purchasers is a factor that enters largely into the rapid sale of the land. A purchaser is only required to pay one-fifth of the price down and is given eleven years in which to pay the balance. This makes a great opportunity for the man with small means to buy a small farm and let the land not only support his family, but pay for itself at the same time.

There is a great movement on the part of the people of the middle western states particularly towards California and the big Panama Exposition of 1915 will add greatly to their number. These people are wandering up and down the state looking for good lands and many of them are buying at Patterson. The land there is the equal of any in the state and is bound to increase many times over in value in the next five to ten years. There is very little land in the state the equal of that at Patterson, that has an abundance of water that can be gotten at so little cost, and fortunate indeed is he who takes advantage of the present opportunity and secures one of these fine farms while they are cheap and on the market. The selling agents have descriptive literature, etc., pertaining to the proposition which they will be glad to mail to any address for the asking. All inquiries should be addressed to the Payne Investment Co., Patterson, Cal.

OAKLAND POULTRY SHOW AWARDS.

AMERICAN.

Barred Plymouth Rocks—Ck, 1, 3; ckl, 1, 2, 3; pen, 2, L. N. Cobbledick & Co.; ck, 2; ckl, 4; pullet, 1, 2, 3, 5, Jas. M. Montgomery; ckl, 5; pen, 3, W. H. Husband; hen, 1, Mrs. C. O. Jones; hen, 2; pen, 4; Thos. A. Atkinson; hen, 3, R. M. Steadman; pen, 1, B. S. Kennedy; pen, 5, Mrs. Hugh McGowan.

Buff Plymouth Rocks—Ck, 1; ckl, 2; hen, 2; pullet, 2, 3, Capt. W. W. Hastings; ckl, 1; hen, 1; pullet, 1, Jas. M. Montgomery.

White Plymouth Rocks—Ck, 1; ckl, 1, 2, 3; hen, 2; pullet, 3; pen, 1, C. O. Preston; ck, 2, 3; hen, novice class, 1, H. I. Tillotson; ck, 4, Mrs. T. I. Everett; hen, 4, V. G. Huntley; ck, 5, J. R. Brook; hen, 1, Mr. and Mrs. P. H. Ferrell; hen, 3, C. J. Struby; pullet, 1, 2, J. A. Johnson; pen, 2, Thos. A. Atkinson.

Partridge Plymouth Rocks—hen, 1, 2, W. H. Kelley; ckl, 3, Thomas Nuttall; ckl, 1; pullet, 1, F. A. Severy; pen, 1, F. E. Holmes; ckl, 2, R. V. Moore; pullet, 2, 3, W. J. Head.

White Wyandotets—Ck, 2; ckl, 2, 3; hen, 2, 3, Mrs. Camella Buergermeister; ck, 1; ckl, 1; hen, 1; pullet, 1, Mrs. D. A. Bulmore; pullet, 2, Harold Naismith; pen, 2, C. P. MacLafferty; pen, 3, Mrs. Geo. T. Crompton; pen, 1, B. S. Kennedy.

Partridge Wyandotets—Ck, 1; hen, 1, 2, C. J. Struby.

Silver Penciled Wyandottes—Ck, 1; hen, 1, 2, 3, J. Stansfield.

Silver Laced Wyandottes—Ck, 1; ckl, 1, 2, 3,; hen, 1, 2, 3; pullet, 1, 2, 3, J. Stansfield.

Columbian Wyandottes—Ck, 2, 3; ckl, 1, 3, 4; hen, 1, 2; pullet, 1, 3, 4; pen, 1, C. J. Siegfried; ck, 1, J. B. Cann; ckl, 2, 5; hen, 3; pullet, 2, 5; pen, 3, Schmidt & Gunther; pen, 2, Jas. Stansfield.

Black Wyandottes—Ck, 1; hen, 1, 2, 3, Jas. Stansfield.

Buff Wyandottes—Ck, 1; hen, 1, 2, 3; pullet, 1, 2: pen. 1. Jas. Stansfield; ckl, 2, Mrs. Don Woolley.

S. C. Rhode Island Reds—Ck, 2, J. H. Crow; ck, 3; hen, 1, 4; pullet, 3; pen, 4, W. W. Hirsch; ck, 1; ckl, 1, 2. 4, 5; hen, 5; pen, 1, 3, W. G. Gibson; ckl, 3; pen, 5, Frank Weaver; hen, 2, 3; pullet, 1, C. H. Smith; pullet, 5, Fowler & Masterson; pullet, 2, E. E. Miller; pullet, 4, C. E. McLean; pen, 2, Twin Oaks Farm.

R. C. Rhode Island Reds—W. W. Hirsch, all awards.

Rhode Island Whites—Mrs. Hugh McGowan, all awards.

ASIATICS.

Light Brahmas—pen, 1, 2, L. N. Cobbledick & Co.; ckl, 3, Wm. Davoust; pullet, 3, Mrs. C. Du Jardin; ck, 2; hen, 3; ckl, 1; pullet, 1, Mrs. Perham Nahl; ck, 1; hen, 1, 2,; ckl, 2; pullet, 3; pen, 3, James Stansfield; ck, 3, Sydney St. Cavett.

Buff Cochins—Hen, 1, J. R. Brook; ckl, 1; pullet, 1, 2, Mrs. C. Du Jardin; ck, 1, 2, C. E. Ross; pullet, 3, Geo. T. Ryan.

Partridge Cochins—Ck, 1; hen, 1, Jas. Stansfield; pullet, 2, W. W. Hirsch; all other awards, D. A. Cohen.

Black Langshans—Pen, 2, D. A. Cohen; ckl, 1, M. W. Nicholson; ck, 1, 2; ckl, 2, 3; hen, 1, 2, 3; pullet, 1, 2, 3; pen, 1, C. E. Ross.

White Langshans—C. E. Ross, all awards.

MEDITERRANEAN.

Buff Leghorns—Ck, 2, 3; ckl, 1; hen, 2; pullet, 2; pen, 1, C. W. Hansen and Roy Young; ck, 1; ckl, 2, 3; hen, 1; pullet, 1, 3; pen, 2, Lindgren Bros.

Brown Leghorns—Ck, 1; ckl, 1; pullet, 1, Fowler & Masterson; ck, 3, Jas. H. Wright; ck, 2; ckl, 2; hen, 1, 2, 3; pullet, 3, W. J. Bond; ckl, 3; pullet, 2; pen, 1. D. A. Cohen.

White Leghorns—Ck, 1; ckl, 1, 2; hen, 2, 3,; pullet, 1, 2, Williams Bros.; ck, 3; hen, 1; pullet, 3, 5, E. Royal Everett; ck, 2; ckl, 3; pullet, 4; pen, 1, Geo. W. Poppelwell; pen, 2, J. I. Rogers.

Silver Duckwing Leghorns—All awards, A. Bailey & Son.

Buff Minorcas—Hen, 2, B. I. Bill; ck, 3; ckl, 3; hen, 3, W. A. Gerdes; ck, 1; ckl, 1; hen, 1; pullet, 3; pen, 1, Lindgren Bros; ckl, 2; pullet, 1, 2; pen, 2, C. A. Tyrrel.

Black Minorcas—Ck, 1, 2; ckl, 2, 4, 5; hen, 1, 3, 4; pullet, 1, 2, 3, 4, 5, J. P. McDonough; ck, 3, G. W. Poppelwell; ck, 5; ckl, 3; hen, 2; pen, 2, H. G. Kappler; ck, 5; hen, 5; pullet, 4, W. A. Gerdes; ckl, 1, Elizabeth Severy.

Rose Comb Black Minorcas—Pen, 1, R. Michell.

Mottled Anconas—Ck, 1; ckl, 1, Thos. A. Atkinson; ckl, 3, Sidney St. Cavett; ckl, 2, Geo. E. Grindell; pen. 1, Randolph Longwell.

Blue Andalusians—Ck, 1; ckl, 1; hen, 1, 2; pullet, 1, 2, J. H. Crow; ckl, 2, V. G. Huntley; ckl, 3, F. E. Holmes; hen, 3, W. W. Hoffman; pullet, 3, Mrs. C. E. Neal; pen, 1, 3, Mrs. J. E. Bill; pen, 2, J. M. Parker.

Buff Orpingtons—Ck, 1, Mrs. M. E. Plaw; ck, 2; ckl, 1; hen, 3, 4, 5; pullet, 1, 4; pen, 1, 3, Twin Oaks Farm; ck, 3; ckl, 2, 3, 4, 5; pullet, 2, 3, 5 California Orpington Yards; hen, 1, 2; pen, 2, Mr. and Mrs. W. S. Sullivan.

White Orpingtons—Ck, 1; pullet, 5, James Bailey; ck, 4, 5; ckl, 1, 3, 4; hen, 1, 3; pullet, 3, 4; pen, 2, 3, California Orpington Yards; ck, 2; ckl, 2, 5; hen, 4; pullet, 2, Twin Oaks Farm; ck, 3, Ferris & Ford; hen, 5, F. Menthe; hen, 2, Mrs. Bertha Hagedorn; pullet, 1; pen, 1, Oakland Orpington Yards.

Black Orpingtons—Ck, 1, Mrs. J. W. Carlen; ck, 2; pullet, 3; pen, 3, Baker & Dulin; ck. 3, ckl, 1; hen, 1, 2; pullet, 1, 2; pen, 1, 2, California Orpington Yards; ckl, 2, H. H. Huber; ckl, 3, Twin Oaks Farm; hen, 3, Mrs. M. E. Plaw.

POLISH.

White Crested Black Polish—Ck, 1, Mrs. J. W. White; ckl, 1, 2, 3; pullet, 3, J. G. Lubben; pullet, 2, Sydney St. Cavett.

DUTCH.

Silver Spangled Hamburgs—All awards, G. L. Wakeman.

FRENCH.

Houdans—Ck, 2, 3; pullet, 1, 2, 5; pen, 3, Schmidt & Gunther; ck, 1; ckl, 3; pullet, 4; pen. 1, V. C. Smith; ckl, 1, 2; hen, 3; pullet, 2; pen, 2, Mrs. Emma F. Reid; hen, 1, 2, H. Clay Morris.

GAMES.

Cornish Indians—Ck, 1, 2; ckl, 2, 3; hen, 1, 2, 3; pullet, 1, 3, Richard Keatinge; ckl, 1; pullet, 2; pen, 1, D. A. Cohen.

ORNAMENTAL BANTAMS.

Black Cochin Bantams—Ck, 2, 3; ckl, 2; hen, 3; pullet, 1, W. W. Hirsch; ck, 1; hen, 1, 2, F. A. Arnold; ckl, 1, 3; pullet, 2, 3, J. R. Brook.

Buff Cochin Bantams—Ck, 2; ckl, 3; pullet, 2; W. W. Hirsch; ck, 1, 3; hen, 1, 2, 3; pen, 1, H. R. Noack; ckl, 2, Henry A. Hoyt; ckl, 1; pullet, 1, 3, E. Lisle Keesling; pen, 3, J. Stansfield; pen, 2, W. H. Brunk.

White Cochin Bantams—All awards, H. R. Noack.

Partridge Cochin Bantams—All awards, Marshall Black Farm.

B. B. Red Game Bantams—Ck, 1; ckl, 1; hen, 1, 2; pullet, 1, H. A. Hoyt; ckl, 2; pullet, 2, W. W. Hoffman; ck, 2; hen, 3, H. I. Marsh; pullet, 3, W. R. Cobbledick.

Golden Sebright Bantams—Ck, 2; hen, 3, J. H. Tomlinson; ck, 1, 3; ckl, 1, 2; hen, 1, 2; pullet, 1, 2; pen, 1, W. W. Hirsch.

Silver Sebright Bantams—Ck, 1; pullet, 1, C. L. Preston.

Black Tailed White Japanese Bantams—All awards, W. W. Hirsch.

White Japanese Bantams—All awards, W. W. Hirsch.

(Continued on Page 568)

American Pumps Again Selected for the Patterson Ranch

The Reason Why

Because the success of the whole project depends on the successful operation of the eight pumping stations.

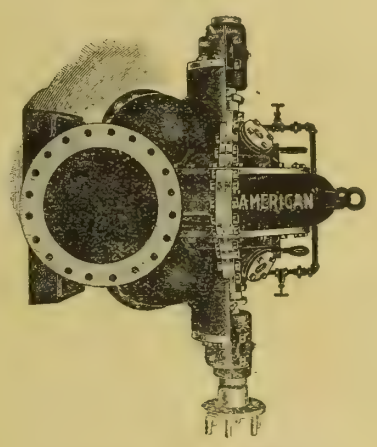
Because, recognizing this, the Patterson Co. employed the BEST ENGINEERS in the country to design the plants and select the pumps.

Because the Engineers knew that the first cost of the pumps was a small item compared with the cost of operation and maintenance, and that therefore GUARANTEED EFFICIENCY must be the determining feature in selecting the PUMPS to be used.

This was WHY AMERICAN PUMPS were selected for installation in the first FIVE STATIONS PUT IN 2 YEARS AGO.

BUT while the efficiency of a new pump can be tested at the factory, ONLY TIME CAN PROVE what the pump will do when working day in and day out. TWO YEARS SERVICE PROVED THEIR LASTING QUALITIES and ELEVEN MORE AMERICAN PUMPS are now being installed.

The Pump



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are the ONLY Pumps in use in the PATTERSON COLONY IRRIGATING SYSTEM

"IRRIGATION BY PUMPING"
Containing description and pictures of this, the Model Pumping Plant of the West, will be sent on application to

What It Means to You

What is true for this pumping plant with pumps having a combined capacity of 200,000 GALLONS A MINUTE and costing over a QUARTER OF A MILLION DOLLARS is true for the smallest isolated irrigating plant in the country.

GUARANTEED EFFICIENCY AND LASTING QUALITY are what count.

You may not feel that the size of your plant justifies the expense of an expert engineer and exhaustive tests. Then PROFIT BY THE EXPERIENCE and expense of the Patterson Company and do as they did—

BUY AN AMERICAN PUMP, even if it costs a little more.

They did so two years ago, and after TWO YEARS SERVICE they have done so again.

BUY AN AMERICAN.

SOLE AGENTS

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70 Fremont Street, San Francisco

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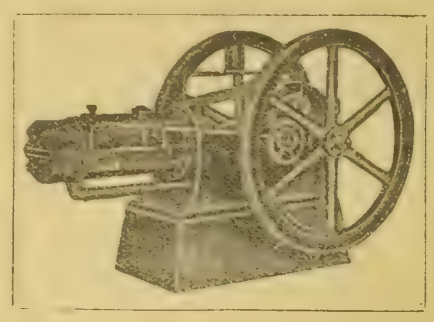
WHY NOT BE UP TO DATE



The
COMMERCIAL ENGINE
Is Kept Strictly
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Our 1911 Catalogue Showing 1912 Construction Can be Had by Writing

The
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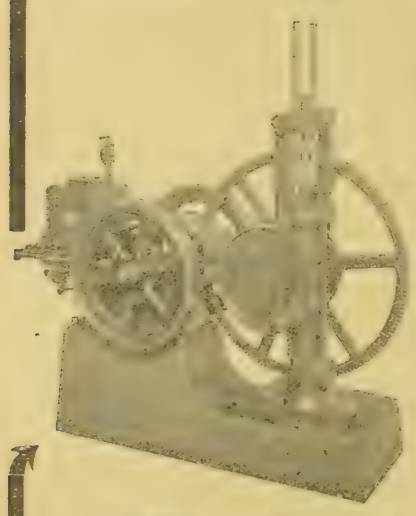
951-953 No. Main St., Los Angeles, Cal.

Have You Seen **Gregory's Triumph Engine**

With Direct Connected Pump Jack?



If you have not, you have not seen the latest thing in a perfect little pumping plant. Note the simplicity of this jack; direct lift each side of the piston; no wobbling or jerking, but a smooth, even stroke. Engine is fitted with pulley, so that you can run the washing machine, the churn, the cream separator, and be such a handy little helper about the place.

We have them in 1 and 2 h.p., and don't forget that we carry a very large stock of engines and pumps of all sizes. Come and see us, or send for catalogue.

WM. GREGORY, Sales Room
602 to 606 N. Main St., Los Angeles, Cal.

Simplicity—Economy—Efficiency
NO ELECTRICITY—NO CARBURETOR

Not in competition with other engines. In a field to itself.

WHY?

What's a goose-quill got to argue about with a fountain pen, only that it one day "wuz all there wuz." Now, it's different. Look closely at the cut and note the absence of cams, yokes, gears, batteries, carburetors and mixing devices, and other complicated parts to get out of order. Unbelievable? Will an engine run on kerosene or distillate, for less than any other engine on the market, forward or backward, and at less expense, and without batteries, carburetor, and so simple that a boy can operate it?

We don't ask you to buy an engine from this advertisement or from any correspondence or representations that we may make; we ask investigation.

We want you to see our engine in operation, let the engine show for itself and when anyone "just chirps" engine in your hearing, we want to have you tell them about the engine YOU SAW, and we leave it to you as to the engine you buy. Demonstrations daily. Free circulars. Write today.

The Simple Oil Engine Company
412 Pacific Bldg. San Francisco, Cal. 114 East 8th St., Los Angeles, Cal.

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100 Williams Street, New York. Works: Perth Amboy, N. J.

CYANIDE of POTASSIUM 98-99%,
CYANIDE SODIUM,
Equivalent to 128-129% Cyanide Potassium, for generating Hydrocyanic Gas

The only positive eradicator of the **San Jose Scale, Red** and **Black Scale** and other insect pests.

FOR SALE BY
The Braun Corporation, 363-71 New High St., Los Angeles, Cal.
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Irrigation and Forestry

WORK THE ENGINE MORE.

The slang expression of the city, "Let George do it," has been paraphrased in the country to "Let the gasoline engine do it." No other single factor has been more potent in making every penny and every minute and every stroke count in farming. The gasoline engine has lifted from the shoulders of the farmer many a burden that taxed his strength and subdued his mental energy. It has given into his hands a means of dispensing with the horse and the forces of the wind. It has been a suggester and a creator of new and important methods of utilizing power on the farm. The man with a gasoline engine is the antithesis of the man with the hoe. Human genius has accomplished no greater extremes. The one was dependent upon all the world; the other is independent of all the world.

The gasoline engine is not a hired man who eats his head off, for the fuel cost of running one is small, being only about one and one-half cents per horsepower per hour, when gasoline is bought for fifteen cents a gallon. Hitched to a multiplicity of devices and machines it is transforming the work of the farmer and changing him from a slave of the elements into the master mechanic at whose bidding the whirring wheels and purring belts perform the onerous work of many human hands. Nothing could be better testimony to the manner in which the gasoline engine has revolutionized the life of the farmer than this statement of a grain-belt farmer who found that it does, indeed, pay to let George, in the form of a gasoline engine, do it:

"My father used to feed cattle and he always shelled all the corn he fed, using self-feeders for the cattle. The cobs were used for fuel and they were very nice to start fires with. He used a two-hole corn sheller and an old eight-horse power, but used only two and four horses on it. On account of old age and not longer being able to run the farm he retired from farm life and moved to town. The corn sheller and power were left on the old homestead, and I moved onto it and used them. Often when I wished to shell corn the track would be very muddy for the horses and the old power would run hard, as it was getting all out of line, and I decided to investigate gasoline engines.

"I was expecting to get about a three or four horsepower, but I secured prices on different sizes and ordered a seven horespower. The factory sent a man to install it and start it. I have been running the engine ever since, and have never had an expert or anyone else to examine it, and it runs just fine. I run a four-hole corn sheller, feed grinder and two pumps; one is sixty rods and the other is 150 feet from the engine, and I can have water for my stock whenever I want it, wind or no wind. I grind a great deal of chicken feed in the spring for my neighbors and at the same time pump water for the stock, and what I charge for grinding helps pay for the gasoline, and a very small quantity of gasoline is required to do all the work. I would not do without the engine for almost any price if I could not get another.

"In 1905 I had a room built near the dwelling, secured a small two-horsepower gasoline engine, and this runs the churn, washing machine, and the house pump from the well, which is forty-four feet deep, while I have a double-cylinder force pump and have hose handy, which in case of fire can be attached to the engine. My two smaller girls, eight and fourteen years of age, can start the engine, and Monday morning, while the engine is running the washing machine, my wife can sit and talk over the telephone, or rest in the rocking chair and read the news."

A gasoline engine may be put into motion by a novice. Once started, it will run half a day or all day without attention. When it stops it requires no care until needed again. The time necessary to feed a team of horses daily will easily keep a gasoline engine in running order. The expense for fuel and lubricants will not exceed the value of the daily oats supply of a pair of working horses.

The gasoline traction engine has put out of commission the old-time horsepower at thrashing time. And when the work is finished it pulls the separator and attendant wagon to the next job. It does the same thing at corn shelling time, at clover hulling, and again at the hurry-up task of silo filling. It pulls a road drag, or leads a string of loaded wagons to market, as occasion may demand. It pulls stumps. It snakes out old hedge roots in a way that is a caution. It plows, disks, harrows and reaps. In a pinch it can be called on to do a dozen other things equally well.

The traction idea is in a measure responsible for the earlier and more generally adopted plan of a centralized power, or one large engine with sufficient motor force to do all the various work of the farm. This system called for a convenient grouping of all the machines to which the power was to be applied. The arrangement had many advantages to commend it. It had also disadvantages, and these spurred the inventive genius of gasoline engine producers to the perfection of means of disposing of them.

Every grain grower has painful recollections of the inconvenience, damage, or actual loss of an oats crop because the ground was so soft that a binder could not be gotten through it. Now a little gasoline engine, a specialist, if you please, is mounted on the machine and furnishes power to run the binder machinery. This removes the greatest part of the draft horse-killing and nerve-wrecking from the horses, and reduces their work merely to that of getting the machine over the ground. This little engine alone makes it possible at times to save crops that would otherwise go to loss.

Other inventors directed their attention to the adjustment of engines to other special purposes. The field is a wide one, and the results of the work done by these specialists in gasoline power application has been and is of constantly increasing importance. So popular has this plan of individual motors become that farms are frequently equipped with a full complement of engines, each of which is devoted to a specific purpose. Baby engines run the washing machine and the sewing machine. Others are designed as motive force for cream sep-

arators. The family of pumping engines is a prolific one. Still larger ones are adapted to grinding and heavy work.

The utility of the gasoline engine is beyond question. Its adaptability to the purposes of farm work is practically limitless. Its simplicity and ease of operation commend it to those unfamiliar with machinery. Its economy of fuel is a final clincher in its behalf.—Wisconsin Farmer.

LUBRICANTS.

Lubricants include two classes of compounds, oils and greases; the first being liquid, the second semi-solid or solid at ordinary temperatures. According to their origin, oils are classified as mineral, animal and vegetable; according to their use, as cylinder, dynamo, engine, machine, etc.

In selecting an oil, it is important to consider the purpose for which the oil is to be used, since its properties should be suited to its particular use. An oil suitable for heavy, slow-running machinery is not suitable for light, rapid-running machinery. A cylinder oil should not decompose at the steam pressure used, as would be the case in using a lard oil; the decomposition resulting in the formation of a fatty acid which acts destructively upon the cylinder.

The viscosity, or degree of fluidity of an oil, is important, as this determines the rate at which the oil will feed.

The color of an oil has very little relation to its useful properties, since oils can be filtered through bone black, treated with nitric acid to remove the "bloom," etc., and thus considerably changed in appearance while remaining inferior in particular lubricating qualities.

It is important that an oil, besides having suitable viscosity and specific gravity for the purpose intended, should be free from acid, and from substances which cause gumming; also, have a sufficiently high "fire test." The presence of free acid in an oil can readily be determined by shaking up a small portion of the oil with warm water, and then placing a piece of blue litmus paper in the water. If the paper turns red, acid is present. As any free acid acts injuriously upon metals, any oil containing it should be rejected. "Gumming" may be caused by cotton-seed oil, castor oil, linseed oil; hence they should not be used in lubricating oils. Rapeseed oil, olive oil, palm oil and colza oil are much better for compounding lubricants.

The majority of lubricating oils are mixtures of mineral and animal or vegetable oils. For ordinary machinery, mineral oils, neat's-foot, lard, tallow and heavy vegetable oils should be used. A rancid oil is not suitable for lubrication. For the reason before given, a mineral oil alone is best suited to cylinders; at most it should contain but a small percentage of vegetable or animal oils.

"Set" or axle greases are made by treating mineral and rosin oils with lime, thus converting them into greases. Boiled greases are made by treating cotton-seed oil, horse-fat, or other suitable oils, with the proper amount of lime necessary to combine with the fatty acids. A neutral boiled grease is the best lubricant for heavy and medium-weight machinery.—G. W. Walker, Assistant, Agricultural Chemistry and Soils, Minn. University Farm.

THE ELECTRIC MOTOR.

The possibilities of electricity on the farm are coming to be more and more recognized every day. Not only are more farm homes and outbuildings being lighted by electricity than ever before, but all over the grain belt electric motors are being installed which do the work formerly requiring several men and horses. Some of the farm machines to which electric power is being attached successfully are feed grinders, fodder cutters, fanning mills, grindstones, circular saws, corn shellers, silage cutters, horse clippers, milking machines, cream separators, churns, feed mixers and numerous other useful machines and implements.

Some idea of the work which a small electric motor can do may be gleaned from the following: Twelve horsepower will drive a grain separator. Three horsepower furnished all the power needed to make 6000 pounds of milk into cheese in one day. Six horsepower will run a feed mill, grinding twenty bushels of corn an hour. Five horsepower grinds twenty-five to forty bushels of feed, or ten to twelve bushels of ear corn an hour. Seven horsepower drives an eighteen-inch separator, burr mill and corn cob crusher and corn sheller, grinding from twelve to fifteen bushels of good, fine meal. Twelve horsepower will run a sixteen-inch cutter and blower and elevate the silage into a silo thirty feet high at the rate of seven tons per hour. One horsepower will pump water from a well of ordinary depth in sufficient quantity to supply the ordinary farm house and all the outbuildings for the ordinary uses.

These figures show the possibilities of electricity as a hired man on the farm. It is inevitable that this power will come to be more and more used on the farms of the grain belt in the next few years. There is an awakened interest in water power development and in the subject of electricity in general. All over Iowa, for example, engineers are being secured to make estimates as to the amount of power which can be developed from water falls and rapids. The same thing is going on in other grain-belt states. Farmers are reading of the power which lies idle in brooks and rivers. They are becoming interested in the subject. It is inevitable that generalities will give way to details before long and the electric motor come to be recognized as one of the most useful factors in farm life before much more time has passed.—Wisconsin Farmer.

Several olive planters are investigating conditions as to growing olives in Madera.

CONSERVATION OF WATER POWER.

Investigations of possible sites for developing water power on the public domain are being pushed by the United States Geological Survey, with resulting withdrawals of land from entry where it is found that valuable sites exist. In July 31,725 acres of such land were withdrawn, including a great number of power sites. No estimate has been made of the horsepower involved, but owing to the character of the power sites withdrawn it is believed to be very large. These July withdrawals make a total outstanding area withdrawn of 1,546,258 acres, based on the examination and recommendation of the Geological Survey, and involving thousands of power sites and doubtless millions of horsepower. The withdrawals are made in aid of proposed legislation by Congress which shall provide for the fullest possible development of these enormously valuable properties and at the same time guard the public interests.

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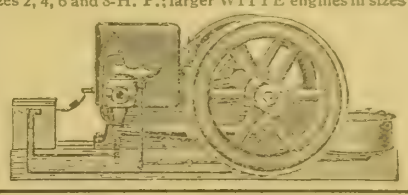

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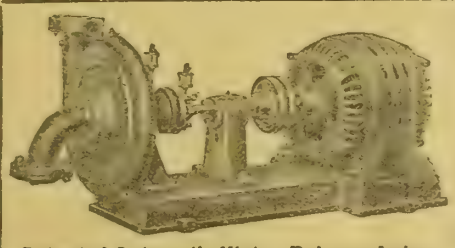

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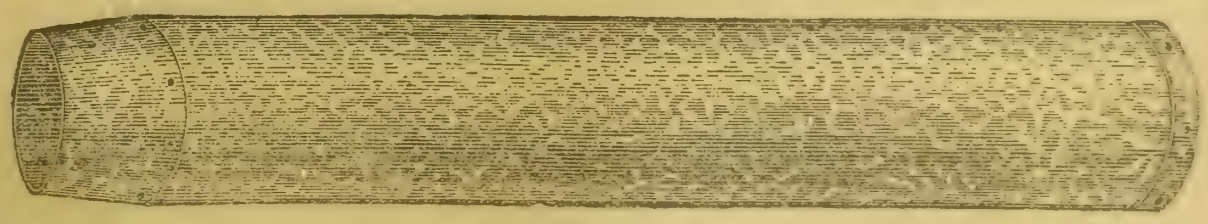

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A Journal of Horticulture and Agriculture

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CITRUS C. of C.

The citrus producing section of Tulare County has an organization which promises much of great value, in fact, has already been of value, to that section. It is a Citrus Chamber of Commerce made up largely of growers and having to do with commercial features of the industry as well as cultural work. There are some live wires in that section and if all the growers would join in such an organization we imagine it would be the means of adding great strength to the industry. It is simply additional proof of the helpfulness of co-operation. The next meeting will be held at Terra Bella.

RIVERS AND HARBORS

The National Rivers and Harbors Congress opens its three-day session in Washington next week. The National Congress also convenes at that time, and presumably the effort on the part of believers in improvement of rivers and harbors will be directed toward discussing matters which may be brought before the national lawmakers. In the words of its call, its object will be: "To put forth its utmost endeavors to crystallize, in the minds of congressmen, the vital necessity for a continuation of the policy adopted by the Sixty-first Congress of an annual river and harbor appropriation bill."

MUNICIPAL FARMING

The municipality of Fresno is engaged in farming operations which are proving profitable. A sale was made last week of 3000 tons of alfalfa hay at nine dollars per ton in the stack. This hay was raised on a sewer farm, so that it was the result of what in most cities would have been worse than a waste. We say worse than wasted, because it costs money to dispose of sewage, but in Fresno's case, the waste is turned on fertile land where nine dollars per ton hay is raised. The farm has earned for the city during the past year about $9000, and during the year 200 additional acres have been planted to alfalfa.

BETTER FARM LIFE.

It is true that agriculture in the United States has reached a very high level of prosperity; but we cannot afford to disregard the signs which teach us that there are influences operating against the establishment or retention of our country life upon a really sound basis. The overextensive and wasteful cultivation of pioneer days must stop and give place to a more economical system. Not only the physical but the ethical needs of the people of the country districts must be considered. In our country life there must be social and intellectual advancement and social betterment. We must try to raise the average of farm life, and we must also try to develop it so that it shall offer exceptional chances for the exceptional man.—Theodore Roosevelt.

HEAVY TAX.

It is said that the citrus growers of California are paying approximately one million dollars a year in fighting scale and other insect enemies of the orchard. We suppose this tax will continue indefinitely, but there is an attractiveness in the search for the bug to eat the bug. If this great burden of the citrus growers can be lessened in any degree by the use of the state's money in the search for parasites, it certainly should be encouraged. The saving from one such beneficial insect has made possible the citrus industry which is now bringing to the state between thirty and forty million dollars every year. Had not the enemy for the white scale been discovered, we do not believe the citrus industry would now be on a profitable basis. We believe there is no other instance showing such marked results, and there never may be again. Admitting that, yet the effort may be justified by some results.

CONTROL THE EVIL

We are informed that several suburban dairies, or rather people having two or three cows, have been mercilessly imposed upon in many recent instances. Districts outside of Los Angeles have been good picking for sharpers who have purchased cows from dairies, which, under the tuberculin test have reacted and have been discarded by the dairies to be picked up by the sharpers who sell to the unwary. Sometimes these cows boast a long pedigree and perhaps come from a fine strain. The uninformed regard them as exceptional bargains at the prices asked. Some cases have been reported where the seller must have known the condition. When these cows have been proved to be non-producers and worse, losing in flesh and otherwise showing ill health, and have been tested by veterinarians, some have been found to be in the last stages of tuberculosis. We do not know whether there is a state law to prevent this traffic, but if not, the state legislature should see that the situation is corrected.

WHY NOT CALIFORNIA?

The Redlands Review recently referred editorially to Yucaipa's "New Home Day" and commented on the display of apples which "was unusually fine; we doubt very much whether the Hood River Valley could do better." Now, why the Hood River Valley? California produces more apples than the Hood River Valley and all the rest of the state of Oregon and all the state of Washington in addition. Not only California does this, but one tiny valley of Santa Cruz County produces more than these two states. Yet our own state papers when they rise to the climax of apple production go to "Hood River." The recent apple show at Watsonville was the finest exclusively apple exposition ever held. We do not say this because it was a California endeavor, but after conversation with judges of such expositions who have visited them all the way from Madison Square to Watsonville. The Sebastopol show was another exceptional exhibition. Far away sections are invested with the glamor and enchantment of distance, but California papers should bear in mind that in apple production we have the greatest little apple producing section in the world.

FARMERS INSTITUTES

J. B. Neff reports farmers institutes at Colton, Dec. 11; Bloomington, Dec. 12; Highlands, Dec. 13-14; Redlands, Dec. 15-16; Beaumont, Dec. 18; Banning, Dec. 19; Coachella, Dec. 20.

January 15-19 a special farmers institute school will be held at Imperial. This is the first effort of the kind in California and the results will be watched with much interest. During the five days Prof. Bioletti will make addresses on adaptability of certain soils to grape vines, influence of locality, preparing land, planting, and general care of vineyard. Presumably these will have special reference to conditions in the Imperial Valley. Dr. Twombly will handle dairy matters and animal industry. The strongest feature of this work will be chemistry of feeds and general feeding hints. Prof. Shaw will give instruction along the line of agronomy, treating particularly of the necessity of humus in the soil, of general grain and alfalfa culture, also sugar beet possibilities of the Valley. Prof. Lipman will give instruction along the line in which he is known to be so eminently well qualified, that of life in the soil as relating to soil fertility. It is hoped that Mr. Petersen of the government experiment station near Bard in the Yuma Reclamation district, will be present and talk upon the experiments recently made with cotton culture. These experiments have been very instructive, especially as to adaptability to California conditions. Mr. W. E. Packard, for years connected with the University work in the Valley, will of course be on hand, for Mr. Packard is an enthusiast in matters agricultural in the Imperial Valley. He will talk upon irrigation and reclamation of alkali lands and other matters which will apply to local conditions.

STANDING FIRM

The walnut growers of Southern California are showing their long headedness by sticking to the price generally conceded to be just at the beginning of the season. The brokers started in and have persistently endeavored to break the price. When no sales are made the growers quietly put the nuts in storage and go about their other business, letting the buyers wait for their nuts. Of course there are some outside of the association who may have sold out under the schedule adopted, but we are assured that not a single association has broken away from the established price. The report that members of the association are selling for less than fourteen cents is presumably an effort to disrupt the local association as well as to batter down the price If there is anything the eastern buyer has no use for it is a co-operative organization of producers. Unfortunately walnut men are not so firmly united as they should be; their operations are not upon such a firm foundation as is the business of the California Fruit Growers Exchange, but it is hoped that this work of the brokers will result only in a closer knit relation between communities.

DID IT PAY?

We hired a man once because we noticed that he spoke pleasantly to his team. It was a small thing, but the straws show which way the wind blows. He stayed with us three years—only left to go onto a farm of his own—and all that time we never heard a curse, or saw a blow struck in anger. The stock did better during those three years than it had done for a long time. The cows looked more thrifty, the horses grew less skittish and restless and even the young stock settled down into regular, sober habits. Did it pay? Try it yourself and see.—Exchange.

If you allow your neighbor's tempting price to lure you into selling him the choicest heifers from your herd, it will be but the question of a few years when he will be offering stock for dairy purposes that is in every way superior to your own cows.

Breeding a gilt at less than one year of age stunts her in her growth at a time when she should be developing the most rapidly. She will never make the sow she might have, had she been bred at twelve or more months old.

Agricultural News Notes of the Pacific Coast

Northern California

Arbuckle, Colusa County, will plant 50,000 almond trees this season.

Irrigation ditches are being extended in the Los Molinos Colony, in Tehama County.

Fair Oaks, Sacramento County, reports the biggest orange crop in its history.

Two hundred acres of eucalyptus are being planted by a Yolo County company.

Butte County oranges are being exhibited at the Western States Land Show in Chicago.

The Supreme Court has sustained the legality of irrigation bonds issued in South San Joaquin County.

A representative of the Rivers and Harbors Committee of Congress has been inspecting the San Joaquin River.

Marysville, Yuba County, is hoping for the establishment of a hundred thousand dollar meat packing house.

Yolo County stockmen have received 2700 head of Mexican cattle which will be pastured in Yolo, Lake and Solano Counties.

Hay growers over the Sacramento Valley who have not already disposed of their output are jubilant over present prices.

Meridian, Sutter County, hopes for the removal of the sugar factory and refinery at Alvarado, Alameda County, to that section.

The deciduous fruit league is proceeding with its organization under the direction of former State Commissioner J. W. Jeffrey.

Fruit growers of the northern end of the state are seriously discussing "Shall the Japanese control the Northern California fruit markets?"

Two trainloads of cattle were received last week by one concern at Williams, Colusa County, the cattle to be pastured on the ranges of the company.

One of the oldest apple orchards in California is being made into stove wood at Chico. These trees were planted about 50 years ago by John Bidwell.

Land owners of the Lisbon district in Yolo County will spend $80,000 in the construction of a concrete levee. It is said to be the first of its kind in the United States.

The State Attorney General will soon commence suits against the land owners along the Sacramento River near Rio Vista, the lands to be used in the widening of the channel of the river.

The work of removing wooden bridges over ditches and of installing concrete siphons under the roadway is continued in the holdings of the Sacramento Valley Irrigation Co. in Glenn and Colusa Counties.

Horticultural Commisisoner C. R. McBride of Solano County reports a small infestation of Russian thistle along Putah Creek, two miles east of Winters. Mr. McBride says that, so far as he knows, it is entirely isolated, and we doubt not will be controlled.

Professor Cook, the State Horticultural Commissioner, announces that stronger efforts than ever will be made to prevent the entrance of the Mediterranean fruit fly. A Californian will go to Honolulu and aid in the fight there in the hope that the pest may be suppressed.

Central California

Tulare County is raising some fine broom corn.

Fresno County's Emperor grape shipping season has closed.

Ducks are reported to be leaving the Tulare Lake section and going toward the ocean.

Tulare County olive growers are shipping most of their pickling olives to Los Angeles.

One prune grower at Exeter reports he has a $600 per acre profit from his three acres of prunes.

Raisin growers the valley over are indignant over the efforts of packers to bear the raisin market.

Grangeville, Kings County, recently held a Chrysanthemum Carnival which was a "Blooming success."

The Salinas Chamber of Commerce reports 2000 acres pledged toward the cannery project for that city.

Work on the irrigation system at Oakdale and the South San Joaquin irrigation district is being pushed.

Lodi closed the season with a greater number of table grapes shipped to its credit than any preceding year.

During the months from April to October 3,185 tourists entered the Sequoia National Park, and 2,212 General Grant Park.

Fruit growers near Watsonville entered suit against buyers to secure balance due on apricots delivered. The amount asked was granted by the court.

The Counties League of boosters of Monterey, Santa Cruz and San Benito County, is asking for government aid in reclamation of the lands in those counties.

A committee appointed by the Governor to devise some means of marketing to better advantage the irrigation bonds of the state, met recently at Stockton.

It is thought that the present scourge of rabies which is infesting all kinds of livestock in Fresno County had its origin in the large number of infected skunks.

T. A. Griffin of Merced, shipped his second carload of black-eyed beans to El Paso, recently. The car contained 40,000 pounds, or 500 sacks. The beans were all grown in the vicinity of Merced.

The Tulare County Dairymen's Association has resolved to grade the cream into first, second and third. This will doubtless result in a much higher standard for butter from that section.

The Board of Directors of the Tulare Irigation District is claiming from the city of Tulare the expense made necessary by the removal of an irrigation ditch ordered by the city trustees.

The annual stockholders meeting of the Lucerne Cream & Butter Co. was held last week at Hanford. The board for the coming year consists of M. J. Caeton, G. A. Dodge, L. F. Burr, J. S. Nisbet and J. H. Dawson.

The bean producing fields of Stanislaus County aggregate 70,000 acres and these produced the snug sum of over two million dollars this year. The average yield per acre is about twelve sacks. Prices to the growers have been running $3.60 to $3.80.

Southern California

Imperial farmers are busy seeding alfalfa.

Beaumont boosters are preparing for a good Farmers Institute next month.

The Milo maize crops of the Imperial Valley are exceptionally heavy this year.

The recent Imperial Valley Fair at El Centro drew out a fine exhibit of poultry.

Elsinore has a walnut tree with a credit of 400 pounds for this one season's output.

Pasadena, Los Angeles County, realizes $10,000 from walnuts grown on its sewer farm.

Vineyard men at Cucamonga held a meeting last week and discussed matters for the coming year.

Several wells for irrigation water have been sunk in the neighborhood of Elsinore, Riverside County.

Coachella Valley dairymen are to establish a creamery at Thermal. It will be in sharge of C. A. Ball.

San Bernardino is already planning to hold its Second National Orange Show during the third week of February.

The Warner ranch in San Diego County is filing on all the water flowing in the San Luis Rey and Santa Ysabel Rivers.

The Orange County sheriff has returned to walnut growers at Anaheim about $300 worth of nuts taken by walnut thieves.

The Southern California Beet Growers Association is now comprised of owners of about forty thousand acres of sugar beet land.

The new lemon packing house at Bloomington, San Bernardino County, is now working on lemons and its equipment is found to work satisfactorily.

Goleta, Santa Barbara County, has already shipped about a thousand tons of walnuts which means about $240,000 to the grower. This year's output is the greatest ever.

Owing to complaint of neighbors in the vicinity of the Pasadena sewer farm that municipality is discussing the advisability of disposing of its hogs and raising mules instead.

An exchange complains because of the contest over the proposed state highway that so many communities are "dragging it around over the state that the poor roadway will be all worn out."

Commissioner Beers of Santa Barbara County reports regarding the Santa Maria section that his investigations "disclosed very encouraging conditions as to fields which were formerly infested with noxious weeds."

The request of the Lima Bean Growers Association of Ventura County that Governor Johnson take steps to secure the manufacture of bean bags at the States Prison jute mill resulted favorably and the prison board has granted the request.

In quoting from its issue of 30 years ago, the Riverside Press gives an item showing that raisin producers of that section were at that time netting seven to eight hundred dollars per acre. Times have changed since then and Riverside as a raisin producer is not particularly noted.

The Coast

Arizona more than doubled its output of barley during the last ten years.

Many Eastern homeseekers are looking over farming land near Wilcox, Ariz.

The Salt River Valley, Arizona, will plant 1300 acres of cantaloupes next season.

A co-operative peach factory is to be established at Parker, near North Yakima, Wash.

Quite extensive plantings of walnuts are being made by farmers of Baker County, Oregon.

Coos County, Ore., is rapidly changing from general farming to a fruit producing section.

Farmers of the Puget Sound Country are organizing for co-operative marketing of their products.

For the first time since the Russo-Japanese war, Puget Sound millers are shipping flour to Siberia.

The Idaho College of Agriculture is taking steps to enforce the pure seed law of that state.

The Colorado State Bee Keepers Association will hold its annual convention Dec. 12 and 13 at Denver.

Spokane is experiencing its first snowfall of the season, there now being about two inches on the ground.

Dairymen at Redmond, Ore., have organized and are determined to receive better returns for their products.

Arizona has declared a quarantine even on household goods from the alfalfa weevil infested districts of Utah.

Waterville, Wash., held its first potato exposition last week, and there were exhibits from all parts of the state.

Re-surveying the lands near Parker, Ariz., is under way. This is a part of the scheme looking toward throwing the lands open.

The annual Territorial Fair at Phoenix showed the greatest attendance ever granted and the exhibits of livestock were especially large.

A hundred thousand dollar corporation has been formed at Wilcox, Ariz., for the purpose of developing and irrigating lands of that section.

An almost unanimous vote was cast last week at Kettle Falls, Wash., in favor of an irrigation district, the waters to be taken from the Colville River.

The department of poultry husbandry of the Oregon Agricultural College claims a record for two hens which have produced during twelve months 259 eggs each.

Farmers of Colorado are raising a fund to pay the salaries of three professors of the Agricultural College who cannot be retained because of shortage of the appropriation.

Farmers near Springfield, Ore., are protesting against the establishment of an irrigation district, for they claim their lands are more valuable for general farming than for fruit growing.

The work of surveying and subdividing irigable lands of the Colorado River Reservation began last week. These lands are near Parker, Ariz. Besides the lands to be allotted to Indians there will be about 150,000 acres opened to white settlers.

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DEHORNING CATTLE.

By O. E. Reed, Kansas Agricultural College.

In the ordinary business dairy herd there are many reasons why animals should be dehorned. Dehorned cows give better results than cows with horns, simply because they are more peaceable and do not fear one another. At one time, the cows needed their horns for protection, but in this age they are cared for and have no use for their weapons. They often do a great deal of harm by injuring members of the herd and making attacks on people. The only case where it is advisable to leave the horns is when raising high-class animals that are likely to be used for show purposes. In the show ring the animals with horns have a better chance for prizes than those animals that have been dehorned.

The best time to dehorn an animal is when it is only a few days old by using caustic potash. But after the horns have made a fair growth they can best be cut off with the saw or clippers. The animals should be fastened securely in a position where the operator can get at the horns. The best method for fastening the animal is to put it in a chute built for this purpose. In sawing or clipping the horn care should be taken to cut deep enough or the horn will grow out again. The clipping should be deep enough to include the ring of skin and hair; and the base of the horn that is amputated should show a ring of hair. As soon as the horn is cut off some disinfectant should be used on the fresh cut. Pine tar or some of the coal tar dips are good for this purpose. Dehorning should be done in late fall or early spring; at this time the weather is moderate and the flies do not bother the animals.

The reason as often given for not dehorning dairy cows is that it will cause them to fall off in their milk flow. If the cows are properly cared for after they are dehorned they will soon recover from the shock of dehorning and the decrease in milk flow will not be as apparent as often is thought.

Twelve cows in the herd at the Kansas State Agricultural college were recently dehorned and a record of the milk production of each cow was kept before and after dehorning. The total production of the twelve for five days before dehorning amounted to 1145.5 pounds of milk. The total production of the twelve cows for a period of five days after dehorning was 110.7 pounds of milk. The total decrease in milk for the twelve cows during the above periods was 40.8 pounds. The daily loss for each cow for five days was only .69 pounds, or about one-half pint. Two of the cows made more milk during the five days after dehorning than they did for the five days before dehorning; the other ten produced less milk after dehorning. On the fifth day after dehorning all except two cows were producing equally as much and some produced more than they did the day before they were dehorned.

Don't forget that the hogs can be overfed. Overfeeding the porkers is an easy matter and excess of feed leads to diseases of the blood, liver and bowels.

UTILIZATION OF FEED BY CATTLE

It is a fact of common knowledge that marked differences exist between individual animals as regards the returns which they yield for the feed consumed. A current statement is that a good feeder has a greater digestive power than a poor one, or that the power of assimilation of the one animal is superior to that of the other, and it has been assumed that the advantage of the better type of animal lay in its ability to produce more flesh or fat from a unit of feed than could the poorer one. It has also been commonly taught, and seems to be generally accepted by animal husbandmen as an established fact, that young growing animals not only make actually larger gains than more mature ones, but likewise more economical gains.

The influence of type and age upon the utilization of feed by cattle has therefore been investigated by officials of the Department of Agriculture and the result published in Bureau of Animal Industry Bulletin No. 128.

Two steer calves were selected as the subjects of this investigation, one a purebred typical beef animal of one of the well known beef brands, the other a "scrub" of mixed breeding. Exhaustive feeding trials were carried out with these animals, including twenty-four experiments with the respiration calorimeter. Finally the steers were subjected to a slaughter test, whereby the quality of the meat and the relative size of the various cuts were accurately determined. The work is therefore important alike to the practical feeder and the agricultural scientist.

The feeding stuffs used were of the same kind for both animals in all the periods, and the different grains used were mixed throughout in the same proportions for each steer. At intervals during the time the digestibility of the total ration and the nitrogen balance were determined for each animal.

During each of the three winters covered by the investigation four experiments were made on each animal by means of the respiration calorimeter in order to determine the percentage availability of the energy of the feed consumed. During the first winter, that of 1904-05, the feeding stuffs used differed from those employed during the ordinary feeding. In the succeeding two winters the grain feeds used were the same, only the amount differing.

While the results fail to show any material difference between the physiological processes of food utilization in the two animals, they do show clearly an economic superiority of the pure bred over the scrub steer, due, first, to his relatively smaller maintenance requirement, and, second, to his ability to consume a larger surplus of feed above the requirement. Both of the facts tend to make the actual production of human food in the form of meat and fat per unit of total feed consumed by the animal notably greater by the pure bred animal.

In the case of the pure bred animal especially, and to a less degree in that of the scrub, rations containing less available energy and notably less digestible protein than the amounts called for by the current feeding

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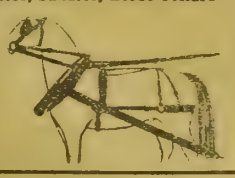

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standards for growing cattle produced entirely satisfactory gains in live weight.

A distinct influence of age upon the maintenance requirement was observed between the ages of 14 and 39 months, the requirements decreasing relatively as the animals matured. The gain in weight of the scrub as compared with that by the pure bred steer consisted more largely of protein with its accompanying water and to a smaller extent of fat, and therefore represented a materially smaller storage of feed energy. This was also indicated by the results of the block test.

The animals were killed on January 4, 1908. The scrub was rated as "common," and the pure bred was graded as "prime." The total dressed weight and the weights of the several wholesale cuts show the considerably higher percentage of dressed weight in the case of the pure bred which is characteristic of the beef animal, and likewise the predominance of the loin cut over the less valuable cuts of the fore quarter in the beef animal as compared with the scrub, and the marketable meat of the retail cuts showed that the proportion of more valuable cuts was notably greater in the pure bred.

RINGING PIGS.

Many people who keep pigs do not find it necessary to subject them to the operation of inserting rings in the snout, but there are cases where it is quite impossible to restrain the animals from "rooting" unless the snout is operated on in such a way that digging causes sufficient pain to induce the animal to desist. Some breeders claim that pigs should be rung from the time they are weaned, but this is not a wise plan; indeed there is no reason why it should not be deferred until the necessity for it arises.

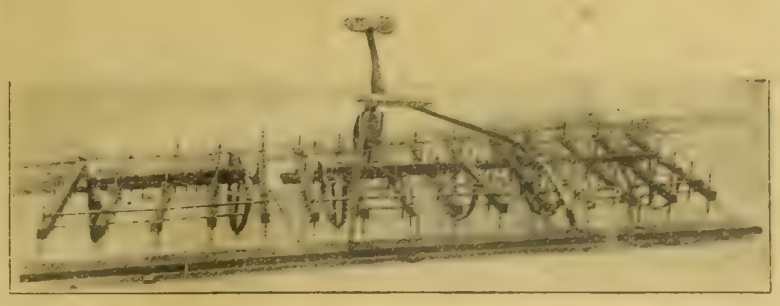
The operation, if skilfully performed and with proper tools, does not take long, and is probably not particularly painful. Certainly the pain actually caused must not be measured by the protests offered. These are always loud, but a pig will make just as much noise over taking a dose of castor oil as having his nose slit. Still, there is sometimes cruelty in neglect to attend to any soreness caused. Festered noses, about which pig men as a rule trouble very little, should be seen to, as otherwise unnecessary pain is caused. Besides, the health of the animal will suffer. When the animals are fed on any very sticky food it will often accumulate round the ring, form a hard lump, and cause soreness. A simple remedy for this is to turn a few peas into a trough of water. While the pigs are searching for and securing these the accumulation gets soaked and soon rubs off.—American Cultivator.

DRYING OFF THE COW.

Answering a question as to applying camphor to a cow's udder to force drying off, Hoard's Dairyman says: "Camphor certainly has the effect of tending to dry off milk secretion; so has fluid extract of belladonna leaves. Camphorated oil rubbed in when drying off a cow helps in the work and leaves no bad effect. The same may be said of belladonna. Belladonna may also be given internally where there is difficulty in drying off milk flow. It is most used for drying off brood mares after weaning of foals."

Opposition to a few reasonable reforms by a few crooked dairymen, not only brings the dairy industry into bad repute, but turns people from the use of dairy products.

The New
20th Century Harrow
Patented



This Shows a 3-Section (90 Teeth) Six-Horse Harrow

This unexcelled, improved, automatic, self-cleaning harrow, which can be operated by a twelve-year-old boy, is a great labor saving device.

The above illustration shows with what ease harrowing can be done by this method, as a riding cart is attached to our harrows, and the operator simply presses a foot lever when he desires to clean the harrow from rubbish, and then the harrow cleans itself automatically.

The old method of cleaning harrows, requires a great deal of strength and labor, as every farmer knows, and by nightfall the operator is exhausted, while with this new invention there is no strength or hard labor required.

Our standard seasoned oak frame harrow is five feet long, five bars to the section (30 teeth to the section), and as many sections as are desired can be used. The illustration also shows a rear action which may be desired by some farmers. This action is extra. It drops to the ground while the main harrow is in the air cleaning itself.

You can use the teeth from your old harrow, as we can supply the harrow complete without teeth. Holes for the teeth bored to order.

The self-cleaning attachment can be purchased separately and you can attach it to your old harrow. The riding cart can also be purchased separately.

This self-cleaning attachment can also be supplied for traction purposes. It is equally good for light and heavy work.

Any size harrow made to order. Write for prices.

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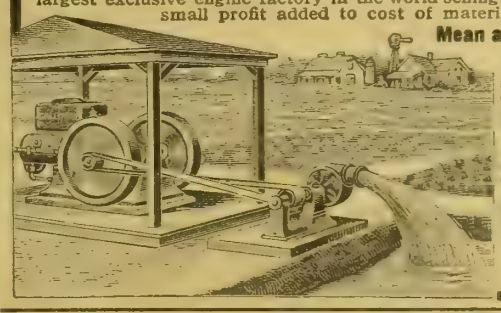
MAKE the most economical and efficient pumping outfits on earth where large quantities of water are required. Galloway Pumping Engines are made in sizes to suit every purpose from 1½ h. p. to 15 h. p. They are built on honor, and so powerful, simple, economical and reliable that they are acknowledged everywhere as the most all-around satisfactory gas power possible to obtain. They are built in the largest exclusive engine factory in the world selling direct to the consumer with just one small profit added to cost of material and labor.



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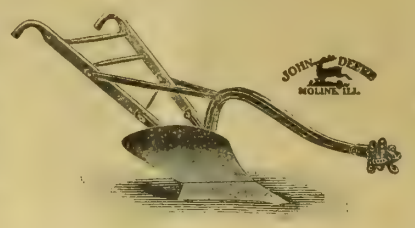

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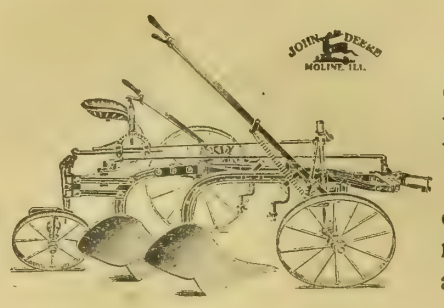

A Plow gets a good reputation by reason of its quality, and not on account of its price. Goods that have the reputation are the biggest sellers on the market.

John Deere Plows out-sell all others, and today there are more of them in actual use than any other make of steel Plows.

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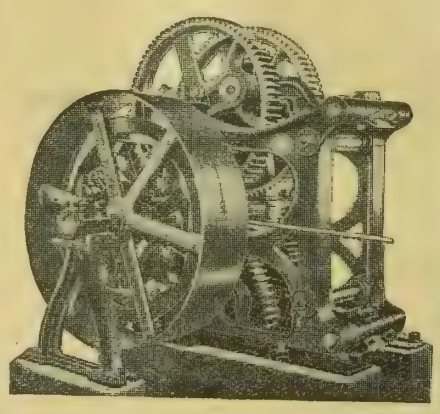
Reliability

OF THE CONCERN BEHIND THE PUMP

POMONA DEEP WELL PUMPS

are the standard of reliability and efficiency, and can be depended upon to do their work with less trouble than others. Some of them have been pumping for 10 years with the same pump heads. They are manufactured by a company who have the equipment and ability to build their machinery in a first-class manner and to install them satisfactorily to their customers.

OF THE PUMP ITSELF AS WELL AS



This cut is a side view of the New Pomona Pump showing friction pulley and out poard bearing.

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One of the great advantages of using Pomona Pumps is the ability to secure repair parts promptly. We carry in stock all needed parts and can furnish same or send men to make repairs at short notice.

A few days ago the Italian Vineyard Company at Guasti (to whom we sold a large pumping plant) accidentally broke a beam at 3 o'clock in the afternoon. They immediately telephoned us and we sent a new part by express on the 5:05 p. m. train. The casting was put in place and the pump running in good shape by 9 o'clock that night. It is service like this that counts. You might break a part in the midst of YOUR busy pumping season, where a few hours' delay might mean several hundred dollars loss. Write us for literature or come to Pomona and see us.

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If thinking of buying any kind of pipe, your best interests will be served by writing us for prices and particulars.

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Enterprise Nursery

R. F. D. No. 2. Box 128 A. Pasadena, Cal.

BUTTER SCORING CONTEST.

By Leon M. Davis.

The butter scoring highest in the sixth and last entry for the year 1911 came from the Dairy Delivery Company of Gustine. Inspection of the sixteen entries revealed that many of the butter makers have not yet adapted their methods of making to the conditions of the season, for one of the general defects was faulty body. Just now, when many cows are well along in their lactation period and when dry feed is being fed, the condition of the butterfat in cream and in butter makes harder the incorporation of moisture, with the result that some buttermakers work their butter in the water, while others use high washing temperatures, either of which may cause defective body. Gummy body, weak body and poor grain, were the common criticisms offered, all of which can be avoided by the buttermaker. In spite of the cooler weather there was present in a number of entries, the same old cream flavor which was prevalent during hot weather. So long as dairymen can not be prevailed upon to take better care of their cream, or creameries do not insist upon frequent delivery, this undesirable flavor will be found. In cold weather, care must be used in the dairy, for although cream may be sweet, it may still have bad flavors. The butter was scored by Mr. Thurston, E. H. Hageman and Leon M. Davis as follows:

Sixth Entry.

Creamery and Location	Score
Dairy Delivery Co., Gustine	95
Suisun Creamery, Suisun	94
University Farm, Davis	93½
Delta Creamery, Imperial	93½
Laton Co-op. Creamery, Laton	93
Dairymen's Co-op. Cr., Tulare	93
Glenn Co. C. S. & Cr., Willows	92½
Cottonwood Cr., Cottonwood	92½
Berkeley Butter Co., Berkeley	92
Ceres Creamery, Ceres	91½
McFarland Cr., McFarland	91½
Cal. Poly. Sch. Cr., S. L. Obispo	90½
Santa Ysabel Cr., Paso Robles	90½
Salinas Cr., Salinas	90

Summary for Contest, 1911.

Highest average score and first prize cup—N. Christensen, Laton, California, 93.58

Second highest average score and second prize cup—Victor Raciarini, Suisun, California, 93.33.

Third highest average score—Henry T. Hurst, University Farm, (not competing), 93.12.

Fourth highest average score and third prize cup—M. G. Johnson, Cottonwood City, 92.58.

Special Prize Cup—For improvements in methods and quality—Karel H. Mulder, Gustine, California, 92.30.

Certificates of Merit.

N. Christensen, Laton, Cal..... 93.58
Victor Baciarini, Suisun, Cal..... 93.33
Henry T. Hurst, Davis, Cal..... 93.12
M. G. Johnson, Cottonwood, Cal... 92.58

If there is sufficient interest shown in the work, it is planned to conduct another contest next year. Plans for this will be taken up later, and every buttermaker is welcome to offer any suggestions. The contest is for the buttermakers, and their support is what determines its success.

LIVESTOCK INSURANCE IN SWEDEN.

In Sweden, insurance of livestock is carried on by 46 societies extending their operations over the whole country, by 107 provincial and 552 cantonal or parochial societies.

The premiums paid yearly by the Swedish farmers for livestock insurance come to about 5 million francs, while the value of the cattle insured may be estimated at about 300 million frs. From an article on the subject in the August number of the Bulletin of Economic and Social Intelligence, published by the International Institute of Agriculture, we learn that, the largest number are insured in the "Scandinavian Livestock Insurance Society," with headquarters at Stockholm. In 1908, the amount of claims paid by this society was 1,636,184 frs., almost half of the total amount paid by all Swedish livestock societies.

In contrast with what is observed in several other countries, as, for example, France and Italy, where local mutual societies are most prominent, in Sweden it is the national insurance societies whose sphere of action is the whole kingdom, that insure the greater number of livestock. Suffice it to say that they insure 72 per cent of the horned cattle.

Two causes have specially contributed to the development of the large societies; the frequent fluctuations of mortality risks, the more dangerous for an insurance society in proportion as its sphere of action is more limited; and the increase in the capital value represented by the livestock, by which the risk is increased and becomes less easy for local societies to support.

In the article mentioned we find all the insurance conditions of the Swedish societies and detailed notices of the criteria the most important of them, the "Scandinavian Livestock Insurance Society," adopts in calculating premiums and settlement of claims.

This society has published interesting statistics of the mortality of the horses insured; for example, in the period 1891-1910, the average death rate of insured horses in Sweden was 2.38 per cent.

The data are grouped according to provinces, so as to show the influence of the various conditions of race, climate and agricultural labor. Thus, for example, in the province of Scania, where economic and meteorologic conditions resemble those of Denmark, the percentage of deaths is far above the general average for Sweden and nearly approaches that revealed by the Danish insurance societies (3.02 per cent).

Anderson, Shasta County, is shipping several cars of olives.

Profit in the Poultry Yard

Practical poultry people who may have ideas from their experience as to methods of feeding and housing and general care of poultry will confer a favor upon the Cultivator and its circle of readers by sending in concise accounts. Mrs. Basley is always willing to answer queries, which with the experience of others should make this a most valuable feature in poultry life on the Coast. Opinions or matters of a personal nature should be omitted, but a concise statement of facts is always valuable

A DEFENSE OF THE FANCIER.

By G. L. Hawley.

Being myself a poultry fancier, I feel a little sensitive about criticisms of the fancier. I write this defence in order to remove, so far as possible, some false ideas from the minds of some people.

It would almost seem to be the idea of some that the fanciers are deliberately breeding away from utility. I know this myself to be false. The fanciers cannot make money out of a bird that will not produce. Last year I bought three hens at five dollars apiece. One of them laid twenty-eight eggs in the month of March, has laid well ever since, and is laying at time of writing. All have proved good layers. In the selection of roosters that I have bought, the laying quality of the parentage has been one of the considerations in the selection of the birds.

Which pays best, a herd of ordinary cows in the dairy or a herd of pure bred milk stock? Oh, you say, the pure breds pay best. They have been bred for milk and butter production. Exactly. But is that outside of the fancier's realm? No, certainly it is not. Now we come down to a consideration of our poultry. What kind of a chicken does the utility man want? He wants a chicken that will lay, and more especially if he runs an egg farm exclusively. But how many utility poultrymen are in a position to breed satisfactorily for egg production? I dare say most are not. It is considerable expense for everyone to be fixed up for special breeding. Why not let the other man do it, and give him a reasonable profit Most people want a chicken of average size of its class, and the market poultryman must have size—a rapid growing, good meaty chicken. Who is fixed up to produce them? The fancier. Well, now, suppose, thrown in with all this, the chicken should actually be a hand some fowl, what harm would be done? None that I can see. Anyone knows that instinctively we take better care of a flock of birds that look well than if they do not.

Do not frown down the fancier, but insist that he produce a good utility bird.

INSTRUCTIONS IN POULTRY RAISING.

Do not undertake too much. The tendency to undertake too much is strong with the beginner. During the hatching season it seems as if there must be more room in the yards than the chicks will ever fill, and one is tempted to hatch a few more, and thus he gets out a large number of chicks. If he has good luck he soon gets his yards filled up with the little fellows, and as they grow there is no room for the increase in size. Then trouble begins. The yards become foul, the chicks crowd and bruise each other and the weaker ones give up and die. It is here where the beginner does wrong, becomes discouraged and neglects his chicks when he should be giving them the very best of care. The proper thing to do is to dispose of a part of the chicks, even if they must be nearly given away. Better do this than to try and keep them all and have them all get stunted and undeveloped. Be determined not to overstock the yards. The beginner should always keep in mind the fact that about half the chicks will be cockerels and plan accordingly.

If he has yard room for 100 mature fowls he should hatch about 250 chicks, as this number would give him 100 pullets, counting half for cockerels and some for loss and culls. The cockerels may be sold for broilers at a good price and help to buy feed for the pullets. Feed your pullets well and get them laying early. Feed animal food. Sometimes it is hard to get animal food for young chicks, and one is ofttimes likely to think it is not necessary to feed animal food to chicks, as their chicks eat heartily, seem all right and grow pretty well and don't seem to need it. Give these same chicks a little fresh ground meat scraps and bone and see how heartily they will eat it, and then watch them and note how much faster they grow and mature. Milk is a very good substitute for animal food. It can be soured and made into cottage cheese and salted a little. The little fellows will eat greedily of it. A little meat goes a long way, as a pound is enough for 30 full grown hens at one feed. half an ounce a day is enough for a full-grown hen. Feed your chicks regularly is one of the great secrets of success in poultry keeping. If hens are overfed one day and starved the next, they can not perform their duties properly and loss will follow the lack of system. Watch for mites, and do not forget that the little red mites multiply amazingly in summer.—The Feather.

SCRATCHING MATERIAL.

How many at this time of year stop to think how necessary it is to provide a supply of scratching material for the hens during the winter months? How few take advantage of the opportunities that are presented from now until snow comes of harvesting a supply.

There are in every community meadows and runs that can be cut for the asking or for a small sum. The hay, though it may be too poor to feed stock, is ideal for scratching purposes. It can be cut any time before the frost comes in the fall, cured and hauled to the poultry house where it can be stacked up until ready for use. It costs barely nothing except the time and labor expended in harvesting it: yet how few avail themselves of this chance of supplying one of the most important necessities to the successful poultry plant.

Oat straw is a more expensive litter, for it is valuable as a food for stock and commands a good price per ton in the market. Likewise, barley, wheat and rye straw are also valuable and are not often used in the scratching pens.

Corn fodder, leaves, stalks, husks make a litter that is durable and is not easily reduced to a powder. The butts may be removed after a time, for they will not readily work up into desirable litter.

Pine needles make a good material, especially for young pullets just commencing to scratch. They soon are reduced to a powder and need often to be replenished.

Leaves also are desirable and can be secured in the autumn and stored for the winter. They, too, are soon reduced in the scratching pen and a large quantity is required to keep up the desired supply.

Whatever is used for scratching material let us see to it that we harvest the supply in season. It will pay you in the end. A good supply of litter is the best investment a poultryman can have if he expects eggs from his flock during the winter season.—The Feather.

THE SETTING HEN AND HER EGGS

If the hen will come off the nest of her own accord for food and water and her dust-bath, and return to her eggs in proper time, it is the most desirable; but if she does not do so, she must be taken off each day for this purpose. It is not good for her to remain longer than one day on the nest. She should have food and water regularly in every twenty-four hours. Accumulations in her bowels should be avoided; for if this be permitted it will cause her to lose control and befoul her nest, causing much trouble, as if the eggs become soiled from this or any other cause it will necessitate cleaning them and the nest, which if not done will hinder the eggs from hatching well.

Of the perfection of his wonderful prose, Ruskin ceased to be proud. In middle age he wrote, "I have had what, in many respects, I boldly call the misfortune, to set my words somewhat prettily together, not without a foolish vanity in the poor knack I had in doing so, until I was heavily punished for this pride, by finding that many people thought of the words only and cared nothing for the meaning."

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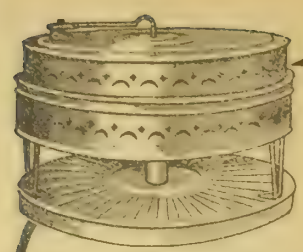

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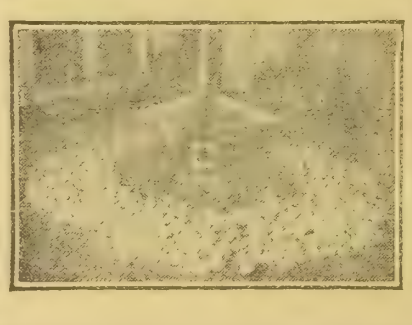

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STANISLAUS POULTRY SHOW.

The first of what is to be the annual Stanislaus Poultry and Pet Stock Show was a decided success to the credit of its energetic promoters, and especially the able secretary, J. W. Guyler of Modesto. Many of the birds entered unexpectedly at the last, were not in first-class condition and showed lack of experience on part of owners but taken as a whole, the birds showed good breeding and intelligent selection.

There were also a good many exhibits from out of the county, especially Stockton and Lodi. The show was held in the big new garage on corner Ninth and H Street, a huge well-lighted room, an ideal place for the purpose.

J. D. Yates judged Mediterranean and American classes. Mr. Moore of Oakland, all others and pet stock, and all seemed satisfied with the scoring.

The merchants of the town responded generously with premiums for special prizes. Three hundred display coops were provided, the most of which were filled.

One of the largest displays was of Buff Leghorns and Buff Minorcas. The Black Minorcas were splendid. One trio of Blacks of unusual size and conformation, attracted as much attention as any one feature of the show. The competition was strong in R. I. Reds and Brown Leghorns. Blue Andalusians were in evidence and some good specimens. There was a solid display of Buff Cochin Bantams, a very attractive trio of Silver Braekels. Some very good White Leghorns, but display was small in comparison to average show. Some good Barred Rocks and White Wyandottes. The writer was particularly impressed with White Orpingtons and White Rocks. Guy Miller of Modesto had a fine display of the latter and showed ability as a poultry fancier as well as breeder of Jersey cows.

Some of the keenest competition was in the Indian Runner class, and there was a good display of Pekins, Rouens, Muscovys and Grey Toulouse geese. Some good bronze and white Holland turkeys were shown. A display of big Bourbon Reds attracted much attention. There was close competition in Belgian hares and pigeons.

AMERICAN.

Rhode Island Reds—Pen, 1, Wm. A. French; 2, 3, O. E. Lambert; ckl, 1, 2, 3, Wm. A. French; 4, Margaret Guyler; hen, 1, Wm. A. French; 2, Al Schmidt; 3,4, O. E. Lambert; pullet, 1, Wm. A. French; 2, O. E. Lambert; 3, band No. 69; 4, band No. 68.

White Plymouth Rocks—Pen, 1; ckl, 2, 3, 4; hen, 1, 2, 3; pullet, 1, 2, 3; pen, 2, J. P. Melrose.

White Wyandottes—Pen, 1, J. P. Corson; pullet, 3, ck, 1, Liggett & Clark; trio, 1, Jas. Anderson; pullet, 1, 2, E. K. Caswell; pen, 2.

Barred Plymouth Rocks—Ckl, 1, 3, 4, Wm. A. French; ckl, 2; pullet, 1, 2. 3, 4, W. S. Sharp; hen, 3, J. A. Russel; hen, 1, 2; trio, 1, Al Schmidt.

Silver-laced Wyandottes—Ckl, 1, 2, 3; pullet, 1, 2, 3, Mrs. Lucy Wirth.

Anconas—Pen, 1; pair, 1; ckl, 1, 2; hen, 1, 2; pullet, 1, 2, Charles F. Holman.

ASIATIC.

Light Brahmas — Pen, Wm. A. French; trio, 1, Master J. H. Corson; ck, 1, Wm. A. French; 2, Mrs. J. F. Kingston; hen, 1, Wm. A. French.

ENGLISH.

White Orpingtons—Pen, 1, M. B. Hamilton; 2, W. F. Brown; 3, Mrs. W. E. Kewin; trio, 1, Mrs. W. E. Kewin; 2, Mrs. A. H. Ford; ckl, 1, 2, 3, Lodi Normal Institute; hen, 1, Chas. P. McAlmond; pullet, 1, 2, Charles P. McAlmond; 3, 4, Lodi Normal Institute.

Black Orpingtons—Pen, 1, Charles F. Holman; pair, 1, Mrs. J. R. Baker; ckl, 1, Charles F. Holman; 2, entry No. 9; 3, Charles F. Holman; pullet, 1, Mrs. J. R. Baker; 2, entry No. 9.

Buff Orpingtons—Pen, 1, Mrs. Carolyn Smyth; 2, W. D. Griffith; pair, 1, entry No. 10; ckl, 1, 2, Mrs. Carolyn Smyth; pullet, 1, 2, Mrs. Carolyn Smyth; 3, 4, William A. French.

FRENCH.

Houdans—Ck, 1, G. L. Meadows; pair, 1, Mrs. G. Van Konyanberg; hen, 1, 2, G. L. Meadows.

DUTCH.

Hamburgs—Trio and hen, 1 in each, F. Hendee.

MEDITERRANEAN.

Black Minorcas—Pen, 1; ck, 1; pullet, 1, 2; ckl, 1; hen, 1, 2, Wm. A. French; trio, 1, C. R. Briggs; ckl, 3, J. W. Mailer; ckl, 4, Mrs. Mary J. Spyres; ckl, 2; pullet, 3, 4; ck, 2, R. A. Whitford.

White Leghorns—Ckl 1, Wm. A. French; ckl, 3, Mrs. A. H. Lord; trio, 1, hen, 1, pullet, 2, J. W. Benoit; pullet, 1, J. A. Switzer; ckl, 2, 4, J. H. Lederle.

Brown Leghorns—Ckl, 2; pullet, 4, E. Portig; pair, 2; hen, 2; ck, 1; pullet, 3; ckl, 2, O. E. Crawford; pen, 2; pair, 1; hen, 1, A. Soderquist; pen, 1; ckl, 1; pullet, 1, 2, Wm. A. French; ck, 2, G. Perdue.

Buff Leghorn—Pair, 1; pen, 1; pullet, 1, 3, A. Soderquist; ckl, 1, pullet, 2; pen, 2, Wm. A. French; trio 1, 2, Mrs. W. D. Griffith; pair 2, John S. Stonehill.

Buff Minorcas—Pair, 1; pullet, 1, 2, A. Soderquist.

Blue Andalusians—Hen, 1; pen, 1, G. L. Meadows; trio, 1, 2, Z. A. Moody; pullet, 1; hen, 2, J. W. Benoit.

White-faced Black Spanish—Trio, 1, C. P. McAlmond; pullet, 1, Mrs. Lucy Wirth; 2, 3, C. P. McAlmond.

BANTAMS.

Black Red Game Bantams—Ck, hen, ckl, pullet, 1 in each, Ben M. Woodhull.

Silver Sebright Bantams—Ckl, 1, 2; pullet, 1, 2, Wm. A. French.

Golden Sebright Bantams—Ckl, 1, 2; pullet, 1, 2, Wm. A. French.

Buff Cochin Bantams—Ck, 1, 2, Ben M. Woodhull; hen, 1, 2, Ben M. Woodhull; 3, E. L. Keesling; 4, Charles W. Pyless; pair, 1, E. L. Keesling; pullet, 1, 2, E. L. Keesling.

WATER FOWLS.

Colored Indian Runner—Old drakes, 1, 2, Lodi Normal Institute; 3, Mrs. B. F. Anderson; 4, Lodi Normal Institute; old ducks, 1, Lodi Normal Institute; 2, 3, 4, Mrs. B. F. Anderson; young drakes, 1, 2, Lodi Normal Institute; 3, Edward E. Anderson; 4, Lodi Normal Institute; young ducks, 1, Edward E. Anderson; 2, 3, Lodi Normal Institute; 4, Iril Fewel.

White Indian Runner—Old drake and old duck, 1 in each, Mrs. B. F. Anderson; young drakes, 1, Mrs. B. F. Anderson; 2, 3, 4, Lodi Normal Institute; young ducks, 1, Mrs. B. F. Anderson; 2, 3, 4, Lodi Normal Institute.

Rouen—Old duck, 1; young drake, 1, 2; young duck, 1, Wm. A. French.

Muscovy—Young drake and young duck, 1 in each, J. F. H. Hughes.

White Pekin—Old drakes, 1, band No. 41; 2, Mrs. W. E. Kewin; 3, Loring R. Swain; old duck, 1, band No. 41; 2, Mrs. W. E. Kewin; 3, Loring R. Swain.

Grey Geese—Gander, 1, unidentified; 2, J. P. Corson; goose, 1, unidentified; 2, J. P. Corson.

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Pheasants—Best display, Mrs. J. R. Baker.

Silver Baeckels—Trio. Mrs. M. E. Mayo.

Dark Cornish—Pen, 1, Mrs. Lucy Wirth; hen, 1, E. Z. Crawford; ckl, 1, 2; pullet, 1, 2, 3, Mrs. Lucy Wirth.

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Capons—First, Mrs. H. Carter; 2, C. C. Parks.

C. C. C.

C. C. C. for chickens is not a patent medicine, but a far more valuable asset in the raising of chickens than has ever been bottled or put in a package. I hold that it is the lazy among us who have to use the advertised cures for our stock, for in several years experience I've never known C. C. C. to fail to keep poultry perfectly well. Its only drawback is that it is no lazy person's perscription, for the letters stand for Care, Cleanliness and Common Sense.

A friend of mine fairly "butted into" the poultry business a year ago, beginning with a brood of seventeen day old Rhode Island Reds. Her knowledge of chicken culture was most limited, but she had a good equipment of common sense, and, having been trained as a nurse, her ideas of cleanliness and carefulness were highly developed. I was fortunate enough to be with her until the chicks were three weeks old, and what I learned from her was assuredly more than the information I gave her, and her success was so surely an outcome of her application of C. C. C. that I'd like to hand on what has proved valuable to me since.

The chicks were confined in a four foot square wire coop, which was made very simply of four panels 48x16 inches, the wood being 4x½ inch dressed pine, and the wire 1 inch mesh. The four panels were hooked together and the whole was covered with a 4x4 foot screen of 2 inch mesh wire. The advantages of this coop were its extreme lightness, airiness, and the ease with which it could be knocked down and packed away when not in use.

The chicks were given grit, shell, charcoal, water and dry wheat bran ad lib., but the rest of their diet was carefully doled out to them, and on the first appearance of any abnormal symptom a change was made. That's where care comes in. I know poultry raisers who will deliberately watch their flock sicken, day after day, when a little correction given at first is all that is necessary to check the disease. I've even heard them say, "I've some chicks with sore head that ought to have salve put on; I'll do it tomorrow." There is no "tomorrow" with a sickening chick if its owner is careful. What is to be done is done in the first place, and nine times out of ten the chick gets well.

In my friend's flock there was but one fatality. When they were nearly three weeks old one chick overate and died suddenly. After that more care was taken to prevent the chicks from eating "not wisely, but too well." They were fed a great variety—green food, rice, wheat, oatmeal, commercial chick food, fish, lean meat, and very little corn in any form. Once or twice they were given a little Jamaica ginger, and several times a pinch of Epsom salts in their water. The coop was moved every day, and all grain was fed in a litter. The coop was sprayed each week, and each chick was inspected for vermin occasionally. The coop was at all times almost as sanitary as a hospital room.

At three months old the cockerels were caponized, and one was lost through the severing of an artery. The operation was found to be simple if one used plenty of C. C. C., and the capons more than paid for the care and food of the flock raised to maturity.

Naturally such success encouraged the beginner, and she now has a yard of very profitable Reds, having bought pullets, and having raised dozens of youngsters hatched in incubators. She exercises the same care with her many as with the first few, and is rewarded in proportion, and I, who watched her methods, have adopted them and am vigilant in the use of C. C. C.—Poultry.

WHEN HENS DO BEST.

One of the most practical egg farmers at Colorado Springs prefers to have 20 hens in each pen 12x16. The connecting yards are 16 by 80 feet. A number of times he has tried more than 20 hens in a pen of this size, but each time lost money by doing so on account of reduced egg production. With 20 hens in each pen he gets from 80 to 95 per cent in egg yield. He frequently gets 20 eggs in a single day from 20 hens or pullets. It is the rule to gather 16, 17 and 18 eggs from each pen of 20 hens during the laying season. He has tried as many as 75 hens in a pen, but in that case could get no more than 60 to 70 per cent of eggs, despite his best efforts in care and feeding. A number of times he tried the experiment of turning the layers out into an alfalfa lot, thinking that perhaps the large range and the green food in its natural state would benefit them and cause them to lay more eggs, but just the reverse seemed to be true. When having the run of the alfalfa they averaged five or six eggs less a day. He is satisfied that his hens do best when kept in their runs and fed regularly the right kind of foods, including green food, grit, shells, etc. In other words, fowls are creatures of habit and after they get settled down to a certain daily routine they will do better under proper conditions than if allowed to run at large or do something different.—Field and Farm.

ADDITIONAL STOCKTON WINNINGS.

Your valuable paper, the California Cultivator, just received. See the account of Stockton Show, with prize list of all varieties except French class. Why has that been left out? It had twenty-four birds in line, and some very fine specimens in it, Mrs. Emma F. Reid's celebrated "Teddy" winning first. She also won in full, cock first and second, hen second, cockerel first and second, pullet first and second, pen first and second, silver cup for best display. Mr. Richards won hen first and second, cock third.—Emma F. Reid.

SAN DIEGO SHOW.

The Fanciers Club of San Diego's forthcoming Poultry Show, January 12 to 18, will be the largest and best ever held in San Diego. Handsome ribbons with cards attached giving variety and awards and many special premiums are being offered. The judges are Geo. P. Meyer of Encanto, Geo. W. Masterson of Duarte and E. C. Emerson of Los Angeles.

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is the best health-insurance you can furnish your fowls. Indispensable as a remedy for *Roup, Colds, Chicken-Pox,* and other poultry ailments. Disease in your flock now will probably mean diseased birds all winter and poor breeders in the spring. Germozone twice-a-week tones and builds up the system, destroys disease germs, insures better and healthier stock *now* and strong, vigorous birds for the breeding season. Best guarantee *against* disease; surest remedy if disease has already taken hold. *Either tablet or liquid. Price 50c.*

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Eggs and Day-Old Chicks.
CHOICE WHITE HOLLAND TURKEYS.
A few extra fine young toms at reasonable prices. Eggs and young poults for sale after March 1st. Now is the time to order. Write wants. Mrs. W. D. Root, 735 Verdugo Road, Glendale. P. O. address, R. D. 1, Box 105, Los Angeles.

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The Goodacre strains—23 more ribbons and silver medal at Phoenix; seven firsts, Stockton, etc. Breeding stock for sale, a few chicks also. Buff Orpington, R. I. Reds, White Leghorns and Anconas. White Runner ducks. Goodacre Bros., Compton, Cal.

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For Sale—Pullets, cockerels and yearling White Orpingtons (Cook strain), Black Minorcas (Northrup strain), White Minorcas, R. I. Reds (Tompkins strain), pure bred. C. U. Chamberlin, Los Gatos, Cal.

Day-Old Chicks, Barred Rock and White Leghorns, good laying strain. Order now to insure early fall delivery. The Fairmount Hatchery, 29 B Rural No 1, Santa Cruz, Cal.

Poultry Wanted—We pay the highest market price for all the local poultry we can get, no matetr how large the quantity; also fresh ranch eggs. We remit immediately. Allaway & Layton Co., 607 E. Third St., Los Angeles, Cal.

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Handsome pure bred Barred Rock cockerels, 8 months old. Very cheap considering quality. $2 each or three for $5. Mrs. Nellie Hart, Holtville, Cal.

For Sale—Barred Plymouth Rocks, cockerels. Eggs $5 and $8 per one hundred. Miss A. Loosemore, Campbell, Cal.

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Ring-Necked China Pheasants for sale. Pairs or breeding pen of four; also eggs for hatching during the spring season. Address T. D. Morris, Agua Caliente, Cal.

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For Sale—Five pairs of White African guineas, $3 per pair. W. A. Grover, Hemet, Cal.

Rose Comb Black Minorcas, nine years line bred. Stock and eggs in season. Eleanore Minorca Farm, R. D. 1, Los Angeles, Cal.

Barred Plymouth Rocks—The kind that "win and lay." Eggs and stock for sale. C. H. Vodden, Los Gatos, Cal.

Fifteen S. C. White Leghorn roosters, 6 months old, from heavy laying stock. L. T. Smith, Beaumont, Cal.

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For Sale—Fine large spineless cactus plants, now ready for planting. Price 50c each. Cooper & Vierra, Yuma, Ariz

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Imperial Valley Fruit Ranch to Let—160 acres in early table grapes, apricots, alfalfa and cotton; 2 miles from county seat. Tenant must have experience, and $3,000 capital to furnish labor. Address Horticultural Dept., 205 Grant Building, Los Angeles, Cal.

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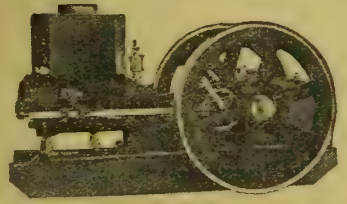

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REFERENCES: Merchant's Bank and Trust Company, Bradstreet, Dun.

IS CIRCULAR SILO PATENTED?

The Iowa Agricultural Experiment Station has set out on a nation wide hunt for a home made round silo built in 1898 or earlier and incorporating some of the esesntial features of the patented structure of today. H. L. King, agricultural engineering experimentalist of the station, has offered a reward of $50 for the first definite information about just such a silo. He expects also to make a trip to several of the older dairying districts of the United States for a personal search for pioneer silos.

Back of this unusual hunt is the claim of the wooden silo manufacturers that American farmers cannot build round silos of any type or material without first paying tribute to them in license fees. They claim a patent monopoly, and they have organized themselves to enforce it. In the past summer of extensive silo building they sent out thousands of letters warning farmers who were putting up home made silos and threatening suit for infringement.

This claim of a silo monopoly concerns the Iowa station, because two of its experimenters, Prof. J. B. Davidson and M. L. King, designed a successful hollow tile silo three years ago, which they dedicated to the American farmer and his free use. This silo has been made the special object of attack in Iowa, where nearly a thousand are in use. Letters warning farmers building these silos have been sent out, and intimations of damage suits have been frequent. Whenever appealed to, the station has made the positive statement, based on investigation, that neither brick, tile nor masonry silos in any way infringe upon wooden silo patents. After further investigation the station has taken the new stand that it is doubtful if the manufacturers really have a monopoly, as they claim, on wooden silo building.

"We have good reason to believe," says Mr. King, "that the special features of wooden silos for which patents are claimed were used in some of the silos built prior to the date of the patents, June, 1899. Those features are the continuous door, reinforced door jambs, door jamb braces and devices for holding the doors in place. Round wooden silos were in use long before 1899. We want additional information about them. For the first information received about such a silo containing some of these mentioned features $50 will be paid if it is sent to the Iowa Agricultural Experiment Station, Ames, Ia.

"The Iowa station is not setting out to fight anybody. It merely wants to make certain about these disputed points and to protect the farmers in Iowa and in every state in what it considers their right to build round silos of brick, tile or masonry, and possibly of wood also."

Kerman's first annual chrysanthemum show called out large attendance.

SHOULDER GALLS AND ABSCESSES.

The causes of shoulder galls and abscesses are ill-fitting and dirty collars, also horses unaccustomed to work are put at hard, continuous pulling before the shoulders become toughened. The first symptom of a sore shoulder is that the hair stands erect in the location of the injury. Later, if the animal is continued at work with the same kind of collar, the skin and hair slough, leaving a raw, bleeding surface. The size of the sore may be from that of a silver dollar up to three inches in diameter.

The sore shoulder causes the horse considerable pain, and if not relieved the animal soon loses flesh, and may cause a sound animal to become balky.

Many times a soft swelling appears just above the point of the shoulder. If opened at the outset a straw-colored liquid escapes. On the other hand if not molested it becomes infected and an abscess forms.

These abscesses are often superficial, but may be deeply seated and require expert attention. The deep abscesses may be located six inches or more below the surface of the skin, between the shoulder joint and the chest wall. These abscesses often prove serious and should only be treated by a qualified veterinarian.

By way of prevention of shoulder abscesses and galls, give particular attention to the collar. See that it fits snugly at the top and only room enough between the neck and collar to admit the arm. Also remember that the collar should be kept clean. Wash the dried sweat off the collar at night, and bathe the shoulders with cold water after the horse is unharnessed.—C. L. Barnes, Colorado Ag. College.

FOOD VALUE OF WALNUTS.

State Statistician Geo. Robertson sends us the following extract from the London Lancet:

"The food value of walnuts is very high; they are very rich in fat, containing as much as 63 per cent, while the proteins amount to nearly 16 per cent. It has been calculated that 30 large walnut kernels contain as much fat as 2¾ pounds of lean beef, and yet the walnut is used as a supplement to a square meal. In the combination, therefore, we have all the elements which make for a complete diet, viz., fat, protein, carbohydrate, to which may be added mineral salts."

FIRST ROADS.

The first road built by white men in the United States was at Jamestown, Virginia, and the first law passed by the General Assembly in 1632, read as follows:

"Highways shall be laid out in such convenient places as are requisite, according as the governor or commissioners shall appoint, or as parishioners of every parish shall agree."

The oldest New England road was "Coast Path," which joined Boston and Plymouth. It was established by the general court in 1639 and in 1653 the Massachusetts commissioners established "Kennebunk Road by the Sea," as a "highway between towns for horse and foot."

Over on the other side of the world in the tropical possessions, the Philippine Islands, the United States government is building good roads at a rate that would surprise the most enthusiastic road booster. Why not at home?—Better Roads.

Midland, Texas, will hold a big irrigation well celebration next week on account of the discovery of a strata of underground water in such quantity that one well is furnishing 2000 gallons per minute, and that at a depth of only 120 feet.

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The supply of ***good*** trees is very, very short.

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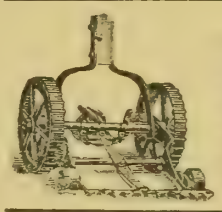

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In one season the Clipper will drive them all out.

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The story of Patterson makes good reading, for it is an epitome of the story of California. Patterson has grown as California has grown—amazingly. And with its growth have come new wealth, artistic beauty and contented people who live on the land, by the land and for the land. Not two blades of grass but twenty have been made to grow where one grew before. Intensive and intelligent cultivation is working the same wonders at Patterson that it has worked elsewhere in California and is playing its part, the leading part, in the making over of Patterson into one of the garden spots of the world.

While the Patterson lands are being developed along the most diversified lines, it is notable that the growing of English walnuts, at present a most important industry confined almost solely to Southern California, promises to become the most attractive business at Patterson. It has been thoroughly demonstrated that the English walnut, when grown on the root of the native black walnut, thrives amazingly at Patterson. The trees make a splendid growth, even more rapid than in Southern California, and come into bearing early. The Franquette and Mayette are the varieties that are being planted, practically to the exclusion of all others. A combination of alfalfa and walnuts is a great favorite with the Patterson settlers, on the theory that the alfalfa will keep up the payments and pay for the property while the walnuts are reaching the full bearing period. No one who knows much about California needs to be told of the sure and certain profits in walnuts. That industry is well established as one of the foremost in California. And alfalfa ranks equally high. It is the greatest mortgage lifter in the world. Combine the two, as they are doing at Patterson, and you have a team that ought to pull any man to prosperity. Watch Patterson's walnut orchards and in a few years you'll see a new star in the walnut firmament.

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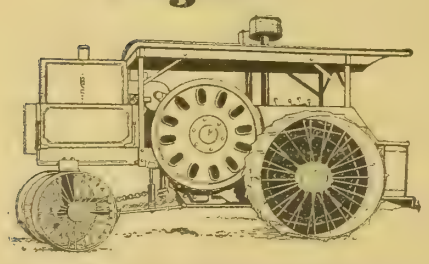

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NATIONAL QUARANTINE.

(Continued from Page 547.)

A recent issue of the Pacific Fruit World reports that Mexican oranges are being shipped into New Orleans. The first consignment of the season, consisting of 1500 boxes, was expected to reach New Orleans about the middle of September. It is not stated from what section of Mexico this fruit was shipped, but it is not very likely that it came from a section which is located very far from the districts known to be infested with the orange maggot—in fact, it is more than likely that this Mexican fruit came from a point where the pest exists.

A national quarantine and inspection law is sadly needed. All Mexican oranges should be prohibited from entering this country, at least through a port situated, as is New Orleans, in the midst of a citrus fruit growing district. The United States Department of Agriculture and the entomologists of the United States, through the Association of Economic Entomologists, have for years striven to have Congress enact a national law for the purpose of protecting against the importation of pests. Certain nursery interests, however, have opposed such a law so strongly as to have prevented, up to this time, all legislation of this kind.

The secretary of the United States Department of Agriculture should have authority with the advice of his bureau chiefs to regulate the importation into this country of fruits and vegetables, as well as nursery stock, and also to regulate the interstate shipments of fruits, vegetables and nursery stock when necessary for the protection of farmers and fruit growers. In Arizona we are especially interested in the prevention of the establishment in this country of the Mexican orange maggot, the melon fly and the Mediterranean fruit fly. It is true that other parts of the country are more directly menaced by these pests than is Arizona, but if once established they will eventually reach our farming districts in spite of our comparative isolation.

Many other foreign pests might be mentioned, but these three which have been considered are of sufficient importance to justify our taking a live interest in the matter of a national quarantine and inspection law. This is an issue which our candidates for the national house of representatives and the senate should consider, and our fruit growers' associations and farmers' organizations should bring the importance of this matter to the attention of these candidates. It is not a political question in any sense, but a matter of doing our part in securing legislation which is first of all for the welfare of the nation at large, and second, for the protection of our local farming industry.

The United States is being made a dumping ground for European refuse nursery and ornamental stock and our farmers and fruit growers are menaced by the importation of fruit and vegetables infected by insect pests and diseases which are capable of doing incalculable damage. Practically all European powers, Canada and other important British possessions have protective legislation which in most cases absolutely prohibits the importation of American nursery stock and admits our fruits only after rigid inspection shows freedom from insect infestation.

The text of the bill now before congress providing for a national law to prevent the importation of insect infested or diseased plants is contained in a circular (No. 37) recently issued from the office of the secretary of the U. S. Department of Agriculture. Let us not only hope, but insist that those who officially represent the new state of Arizona at the national capitol support this bill for the benefit of not only the producer of farm products, but for the consumer who pays his share of taxes levied by insect pests.

CATCHING COLD.

Coryza is an inflammation of the mucous membrane lining the cavities of the nasal passages, and may be either of the acute or chronic variety. In its acute form it is generally called "a cold in the head." The reason for this is that, given certain conditions of the system which tend to inflamed mucous membrane, the acute attack can very often be traced to exposure to cold, drafts or damp. It can, perhaps, just as often be traced to heat, dust and stuffiness; but, whatever may be the final touch, it is certain that the victim of the coryza was in a condition in which his powers of resistance were reduced, or he could not have "caught cold."

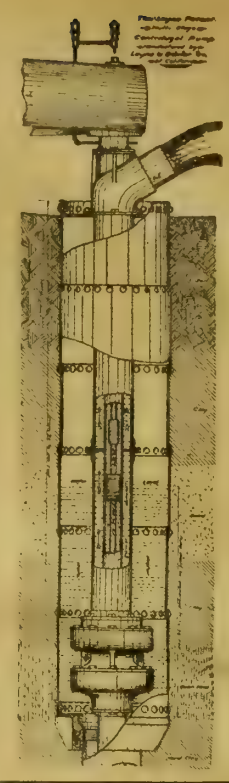
It is of great importance that those people who spend many months of the year traveling from one attack of coryza to another should learn just where to place the blame for their trouble. It is a pity to get into the habit of blaming every open door or window, or dreading every unexpected breath of air, because this only leads to the course of life most to be avoided. If a person finds himself with the "catching cold" habit increasing winter by winter, depend upon it there is something wrong, and that something is not fresh air, because that is the very thing he, of all people, most needs. In such a case the daily habits should be carefully overhauled.

Does the sufferer overeat, and especially does he take too much animal food and too little exercise? This mistake is at the root of the coryza habit in many cases. It is simply the sign of rebellion on the part of the overloaded system. Often the trouble may be traced to too much heavy clothing, to rooms kept too warm, and to an atmosphere dried up with steam and no ventilation. People who sleep in shut-up, stuffy bedrooms ought to live in a state of grateful surprise if they do not have constant colds.

The change that can be produced in the human constitution in this respect by a continuous course of common sense applied to daily life is almost like miracle working. But the course must be begun today and kept up at least three hundred and sixty-five days in the year. The cold catcher must pay minute attention to the digestive process, and is probably better off to eat meat not more than once a day at the most. His bedroom window must stay open winter and summer—not two inches, but all the way open. He must accustom himself to cold water bathing. This does not necessarily mean ice water bathing. A bath thermometer is a cheap purchase, and sixty-five degrees is cold enough for most persons.

Deep, slow breathing, with the mouth closed, should be constantly practiced, and never more faithfully than at the moment when a cold seems to be in the act of getting itself "caught."—Youth's Companion.

The harvesting of the crop of the Stanford Vineyard at Vina, Tehama County, required 20 men and 50 teams. This vineyard was planted over fifty years ago.



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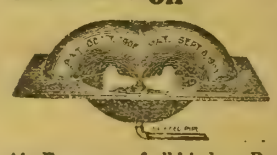

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Questions and Answers

THE EDITOR AND STAFF

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper, and sign full name and address. Unsigned communications receive no attention.

Buffalo Bugs.

I send specimens of bugs or worms which were in a trunk where there was nothing apparently to attract them; also found them near flour bin and around edges of pantry shelves.—Subscriber, Monrovia.

These were submitted to Mr. E. O. Essig, secretary of the State Horticultural Commission, who writes:

"This same insect came to me at Santa Paula. It is one of the carpet beetles of the genus Anthrenus, and is what is commonly known as the buffalo moth. It is not surprising to find it among clothing in trunks, as it is a common clothes feeder, and also works on carpets, and in fact any of such materials. A good way to rid a house of this pest is to give it a strong fumigation with hydrocyanic acid gas."

This pest is one of the most perplexing the housewife has to deal with. It will destroy any woolen cloth. We do not know whether moth balls will affect them or not, but the inquirer should take steps at once to destroy them by the method Mr. Essig prescribes.

Dynamite for Subsoiling.

We have read with interest your article on removing of hardpan with dynamite; also have the booklet issued by the Du Pont people, but in neither do we find anything regarding its use in destroying plowsole or so called hardpan in orange groves. Last spring I tried running a subsoil plow through the middle, going both ways, in the orchard, but see little, if any, beneficial results. My plow was 18 inches from point to beam. From this you will see that I could not go very deep.—Subscriber, Bloomington.

We believe the use of dynamite will not be necessary in such a case. We also believe that fall subsoiling is much to be preferred. If this orchard were ours, we would run the ordinary 12 inch plow as deep as possible, then put the subsoiler in the bottom of the furrow. If this is done in the fall, when the subsoil is dry and hard, it would result in shattering and breaking up a material area of it. In the spring, after the heavy rains, there is practically no plowsole, and even if there were, it would be so softened that subsoiling would not have the breaking up effect which it would when it is dry and hard. We grant it will take a powerful team to do it at this time of the year. The trouble with dynamite in this class of hardpan is that the effect would be for only one season.

Defective Walnut Shells.

I send walnuts with perforated shells or shells so very thin that the least pressure breaks them through. There is apparently a deficiency in shell making material. The trouble is confined to some ten or twelve trees in my orchard. The trees are large, about 18 years old and seedlings, vigorous and very healthy looking. Hulls were all right, same as in the perfect nuts. This has appeared to a limited extent in these trees before, but this year it is worse.—Subscriber, San Jose.

Dr. J. Eliot Coit answers: "Walnuts the shells of which are malformed, leaving in many cases openings exposing plump, well filled meats, are known by walnut men as "perforated" walnuts. It seems to be a physiological disease due to some obscure derangement of nutrition. Appears to be worse on young trees than old. Cause has never been ascertained. It has been suggested that the walnut aphis which occurs in such large numbers some years is either partly or wholly responsible for this trouble."

Legal

Edw. L. Payne, attorney, 301-304 Douglas Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Payne is paid. When replies are wished in Cultivator address query to 115½ N Broadway, Los Angeles.

Tresspassing Stock.

Would like information as to the present status of the law regarding trespassing stock. Must land be fenced in order to secure recompense for damage done? What is the law as to estrays?—Subscriber, K. M. H., Santa Ynez.

See article by Mr. Payne in stock department of last week.

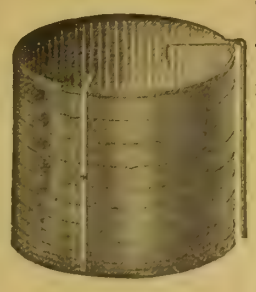
IRRIGATION RESOURCES OF CALIFORNIA.

The mapping of the irrigable agricultural areas of California and the preparation of a report showing the present and possible future irrigation development in the state is the task turned over to the irrigation investigations of the United States Department of Agriculture by the State Conservation Commission of California, of which former Governor Pardee is chairman, and Francis Cuttle and J. P. Baumgartner are the other members.

Ten thousand dollars has been set aside by the Conservation Commission for this work under co-operative agreement with the Director of the Office of Experiment Stations and the Secretary of Agriculture. According to this agreement, not only is the Department of Agriculture conducting the investigation and supplying part of the immediate funds needed, but it is also placing at the disposal of the Conservation Commission for the purpose of this report the results of the irrigation census in California recently completed at a large cost under co-operative agreement between the Department of Agriculture and the Bureau of the Census. All of the data gathered in California along irrigation lines during the past eleven years under authority of the Secretary of Agriculture and in co-operation with the State of California will also be drawn upon.

While the irrigation map being made is not to be based on precise surveys made during the present year, it will follow careful field investigations into the irrigable agricultural areas of every valley of any importance in the state. The map will be prepared on a large scale, and will show the irrigable agricultural areas in every part of the state where irrigation is or should be practiced. It will also show the irrigated areas, the water resources of importance in irrigation, and all of the co-operative and company canals.

The field work of this investigation has already begun, and the northeastern counties of the state are covered. From eight to ten men will be engaged on the investigation throughout the winter, and it is expected that it will be completed by April. In the meantime progress reports will be issued stating the conditions found, and before the next meeting of the legislature it is expected that a bulletin carrying the results of the entire inquiry will be issued by the Department of Agriculture at Washington. The work is being directed from the California headquarters of Irrigation Investigations, at Berkeley.



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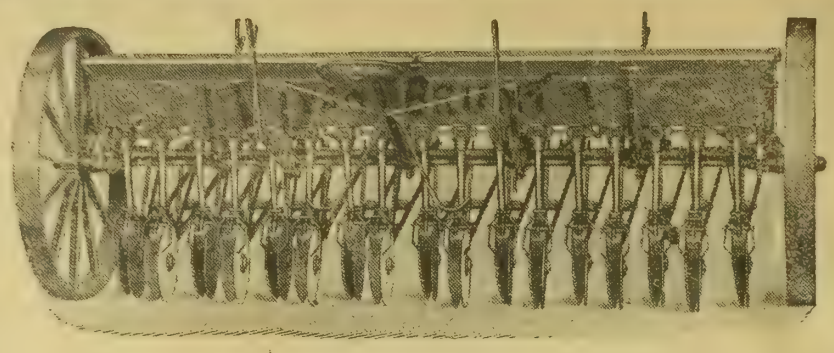

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(Continued from Page 553)

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PIT GAMES.

American—All awards, D. A. Cohen.

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White Holland—Yearling tom, 1; old tom, 2, L. N. Cobbledick; old tom, 1, Frank Moore; ckl, 1; hen, 1, D. A. Cohen.

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Rouen—Drake, 1; duck, 1, D. A. Cohen; young drake, 1; young duck, 1, W. W. Hirsch.

Aylesbury—All awards, V. G. Huntley.

Mammoth Imp. Pekin—All awards. W. W. Hirsch.

Muscovys—Old drakes, 2, 3; old ducks, 1, 2, 3; young drakes, 1, 2; young ducks, 1, 2; pen, 2, D. A. Cohen; old drake, 1; duck, 1, Mrs. M. E. Plaw; young duck, 3, I. E. Bonsell; pen, 1, Mrs. A. Lohnke.

Indian Runners, Fawn and White—Young drakes, 2, 3, J. T. Sullivan; young ducks, 1, 2, 3; pen, 1, J. T. Sullivan; drake, 1; old duck, 1; young drake, 1, Caldwell Bros..

Indian Runners, White—Young drake, 1; young duck, 2, 3, J. T. Sullivan; drake, 2; duck, 1, Mrs. M. L. Scho.

GEESE.

Toulouse—Old ganders, 1, 2; young ganders, 1, 2; old goose, 1, 2; young goose, 1, 2, W. W. Hirsch; young gander, 3, D. A. Cohen; old goose, 3, Mrs. Hugh McGowan.

White China—All awards, W. W. Hirsch.

Brown China—All awards, W. W. Hirsch.

Embden—Young gander, 1, W. W. Hirsch; young goose, 1, D. A. Cohen.

Gray African—All awards, W. W. Hirsch.

STRYCHNINE POISONING IN DOGS.

When the house dog comes home, acting very strangely and frothy saliva driveling from the mouth, there are a number of things to be considered. Most people think first of rabies and secondly of poisoning. Since both are very common the general public should be enlightened in regard to them.

Rabies can not be easily diagnosed, but strychnine poisoning should be readily recognized by anyone.

The first symptoms of strychnine poisoning appear in from fifteen to sixty minutes after the drug has been administered, if it is carefully hidden in a large piece of meat it may be an hour or more before any symptoms appear.

At first the animal acts extremely nervous, it cannot stand still and constantly lifts its feet as if the floor were hot. Rapidly the muscles become stiff and the dog assumes a position resembling a saw buck, next spasms appear and last for a few seconds, then the muscles will partially relax and the animal will be able to breathe more freely.

Spasms will recur more and more frequently until death results.

What can the owner do for the patient until the doctor arrives? In the first place, do not waste valuable time trying home remedies before calling professional aid. Minutes are precious in cases of strychnine poisoning.

Lard, cream and all such agents are absolutely of no value and the animal is only annoyed by attempts to administer them. The only household remedy that can be of value is mustard, and it is ordinarily too slow in action to accomplish any good. A teaspoonful in a cup of water may be given by means of a tablespoon. Other remedies are useless and are consequently worse than nothing. The doctor can produce vomiting in less than fifteen minutes or wash out the entire intestinal tract.

There is no danger of the animal biting and absolute quiet is good treatment.—H. E. Kingman, Colorado Agri. College.

Now that a shake-up has occurred in the state printing office and presumably an honest administration of affairs will obtain, we would like to see the system of state text book production continued for a short time. That there has been graft in the past goes without saying; the books have been offered at a price even equal to that asked by the book trust. Youngsters of this state should be supplied with school books at a much lower price than during the past few years. It is indeed unfortunate that the system of graft in this country should fasten itself upon the education of our youth. It is self-evident that we must have new and up-to-date books to place before our children, but the chronic change of books each term or at least each year has placed a useless and heavy burden on all parents.

HIS CONSOLATION.

Nebuchadnezzar was dining on all-fours.

"Anyway," he observed, "I'm more comfortable than that picnic party."

Thus we see there's nothing so bad that it might not be worse.—Harper's Bazar.

Household Department

THE OLD GRAY TURKEY'S NEST.

Adown a green lane shaded by spreading apple trees,
Near where the young corn murmured uncertain melodies,
A lithe and agile figure, all clad in feathered gray,
With high and halting footsteps pursued its devious way.
Cool lay the morning dewdrops on every blade of grass;
The sweet June winds blew over, then turned to softly pass;
And all the nameless odors of Araby the Blest,
Lured on and on the seeker for the old gray turkey's nest.

Beyond, a fragrant jungle abloom with nodding peas,
Where butterflies swayed lightly to the trombones of the bees.
Where slid, with wary motions, and with suspicious eyes,
A small head, weirdly snake-like, in a perfumed paradise.
The cherry-bird chirred shrilly amid the crimson fruit,
The bobolink—derisive—urged on the sly pursuit,
And, skulking in the thicket, the partridge joined the quest;
All subtly knew the seeker for the old gray turkey's nest.

'Mid gently tossing wheat waves, there cleft its sinuous way,
A curving neck, and over there sailed a dash of spray:
With plumy breast and pinions a swan the cloudlets grew—
A gray swan in the green sea, a white swan in the blue.
And then through tags of sweet fern a shadow held its way,
With flakes of light bemottled, all swift and lithe and gray;
Behind, a larger shadow with naked small feet pressed,
With eager blue eyes seeking the old gray turkey's nest.

A pause, a questing "quit, quit," a running swift as thought,
Then silence, and the quick eyes fixed on the spot they sought.
And nearer yet, and nearer—the dry leaves eddy round,
A sudden flash and scuttle—the treasure rare is found.
The small heart swells with triumph, and inly shouts and sings,
Till joins in exultations the subtle soul of things.
Oh, once to know the rapture, the triumph of the quest,
Again to follow, follow, to the old gray turkey's nest.—Exchange.

DIGESTION AND HEALTH.

The scientific physician of experience will observe patiently and confidently the patient's need for nutrition, as unmistakably shown by weakness and loss of weight. It is good treatment to offer what is delicate, light food to a sick person. Nothing is ever lost by encouraging the return of real hunger, and everything is gained for the good of the patient, says "Medical Review."

Let not your fear of complications, or your theories of fasting or waste of patient's strength cause any neglect of the foregoing rules in the scientific treatment of the unfortunate sick. The hunger signal will appear in due time, but if it should not come, it shows that the case is hopelessly fatal: in such cases it would be wholly useless to force food.

The alimentary canal is the root of life. The weight of the body depends upon the amount of food that it can prepare and absorb, while strength and bodily comfort depend upon so much as is perfectly converted and assimilated. Perfect digestion depends upon health of the vital organs, and in turn perfect health of the vital organs depends upon a perfect digestion.

It is seen by this interdependence between vital parts and digestion, that continuous health depends upon an even balance of forces acting in harmony. If the food is proper and digestion perfect, nature has a fair chance to show itself in the beauty of health.

Mental and physical wrecks and human beings with added sorrows, are directly traceable to mistakes, which start at the mouth. It seems strange that man's food, his best ally, can at the same time be his greatest danger.

Temptations of the table and sideboard appear hard to resist, habit is strong and holds on with a tight grip. Children are misfed as a rule from the beginning, thus creating a bad tendency before the infant leaves the nurse. As a growing child the dangerous habit of gorging candy and stimulating food is unchecked, child sickness and disease are thus produced, and in no other way, save in rare cases.

Children have many narrow escapes from death, but reserve vitality carries some of them to mature years, even though affected with disorders and disease all along the way. In spite of daily and oft repeated errors, children manage to live and grow, but many are stunted and deformed by the time the growth is finished.

SCOTCH HUMOR.

If any of my readers are still in doubt as to the exact connotation of the adjective "pawky," or question its entire applicability to the humor of Scotland, I think the following little tale will clear the matter up. At a funeral in Glasgow a stranger had taken his seat in one of the mourning carriages, clad in decent black. His presence excited the curiosity of the other three occupants, one of whom presently could stand it no longer, and thus addressed him:

"Ye'll be a brither o' the corp?"

"No!" replied the gloomy stranger: "I'm no brither o' the corp!"

"Weel, then," pursued the curious mourner; "ye'll be his cousin?"

"No, I'm no that!" was the still tantalizing reply.

"No?" went on the insatiate querent; "then ye'll be a freend o' the corp?"

"No that either!" admitted the stranger. "To tell the truth, I'v no been that weel mysel', and as my doctor has ordered me some carriage exercise, I thocht this wad be the cheapest way to tak' it!"—Charles Johnston, in Harper's Weekly.

ANTIDOTE FOR "TOADSTOOL" POISONING.

Dr. Murril is reported as stating that there is no antidote known for "toadstool" or amanita poisoning. Gibson, in his book, makes mention of sulphate of atropin, which, injected hypodermically in repeated doses of one-ninetieth of a grain, is said to be extremely efficacious.

When all fungus gatherers learn to discard such foolish tests as boiling with a silver spoon? If they look for the bulb or poison cup at the root and the frill on the stalk and find them lacking it is safe to say they can eat any pleasant-smelling fungus without serious inconvenience — even russala emetica, provided that it be cooked. At least they will not encounter the hideous risks attendant on an entanglement with the amanitas.—New York Times.

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To little isolated farms
From cities far away.
Through country lanes it reaches out,
Beyond the upland lea;
And ah, its travel-feet are stout—
The R. F. D.!

The blessed little box of tin
Beside the winding road,
What treasures may be stored therein
From out the postman's load!
The barefoot children caper down
And crowd about to see.
Ah, better than the joys of town—
The R. F. D.!

The long and lonely country days
Are lightened by the mail.
And cheery hopes and better ways
Spring in the postman's trail.
And farm and city, understood,
More happily agree.
God bless the bond of brotherhood
The R. F. D.!
—Youths' Companion.

EQUIPMENT MEANS ECONOMY.

I saw an aluminum pail the other day that struck me with great admiration and envy. It had a lid that was easily removable and easily clamped on so tightly that no un-intelligent effort could remove it—and this lid was perforated by a grating of small holes at one side allowing air to pass in, or offering a splendid means of draining off water or liquid from anything inside the pail.

I made clabber cheese in this pail and found the process wonderfully simplified by this convenient appliance. Besides, the pail itself was so light, so easily cleaned, it was a simple joy of possession to the woman who owned it.

When I consider the rapid growth of convenience in the household the past twenty years, I am struck with fresh wonder and alarm at the growing distaste for housework that posseses the young women of our time.

When I remember the heavy wooden tubs, iron tea kettles and dinner pots our blessed grandmothers wrestled with and came out serene and smiling, I feel like shaking the degenerate women who complain, today, of drudgery.

This complaint is, of course, the mere echo of our progress along the line of convenience. There is no limit to human aspiration. Wonderful as the telephone is, I heard a young woman say, not long ago, that telephone poles were terribly primitive looking things that she believed we would get rid of them some way. Sure enough, I soon heard that they were running the telephone wires under ground—and who knows when a still more subtle means of communication may be discovered?

Grasp the Situation.

Now the thing we must learn to do in this world is to grasp the situation as it dawns, extract the good, discard the evil, and move along with the world as it goes. This does not mean, as many mistaken women have supposed, that we are to throw down our old responsibilities and cares, shake off the claims of the kitchen and the household and step forth emancipated from the ancient work of woman—the household work. But it does mean that we are very stupid if we do not at once grasp every improved means of convenience possible to human life.

Not all of us are assured of more than one comfortable existence—the life here on this little planet we call the world. People are wont to allow this "spangle of existence" to slip away without sensing to the fullest its possibilities. I believe this is particularly true of a certain class of farmers. They fail to realize the possibilities of home life.

The big work of agriculture is calculated to occupy to the fullest a man's mind. He is so tired when he comes to the house that anything like a meal or a bed appeals to him as a luxury and he is likely to sit down in great contentment in the kitchen or any place else where there is a chair. The fact that his wife may have been in the kitchen all day and may be feeling quite tired of it, scarcely occurs to him.

This used to be a very common condition of farm life, though it must be admitted that in these days it is more than likely that the woman has "hitched up" and gone to town or to a meeting of the neighborhood club or the church Ladies' Aid Society.

At all events, the old time farmer's wife who seldom left the place, whose hands were constantly full of work of some sort or other is certainly a thing of the past in America.

Yet with all our progress and our freedom we still hear women complaining of having no time—of being constantly in a rush—of feeling intensely the complexities of modern life.

Washington Woman Saves Time for Garden.

I know a woman who makes her living on a five-acre "ranch" in Puyallup Valley, Washington. She is the most systematic person I ever knew and it is the rule of her life to investigate everything that is called a convenience and to get it for her use in the kitchen and on the ranch if she sees that it in any way expedites toil or saves wear and tear of brain and muscle.

She quickly grasped the fact that the steam cooker gets dinner while she hoes or plants or plows her crops; and I have no doubt if the electric washer or mangle were a possibility for her she would have them, because she is alert to every mechanical possibility of getting a living out of five acres of ground.

I am sure the farmer after watching her employ every clever idea by way of simplifying the interior work so as to get more time for the out-of-door work would be for going home, at once, and fitting up his kitchen with every device for shortening the labors of his wife and rendering her thus free for the remunerative work of dairying and poultry raising and small fruit growing that a woman may so healthfully and easily manage.

Saving of Work; Also of Money.

I believe if all farm women were fully awake to the economy of convenience the men would also become awake to it.

Much is wasted on the farm by following along old drudgery lines of labor. It is not so much to "save work" as to save money and add intelligently to the family income that the farm woman should turn her attention to all that expedites her work and brings her better results.

Take as a sample instance the aluminum pail. I had my cottage cheese made in five minutes, because of the strainer in the tight lid of that pail. To be sure the first outlay for the pail was considerable, but the moments saved in a year's time will re-

turn in actual cash value much more than the difference between the aluminum pail and a common tin one.

If you will study the subject of proper equipment in the farm kitchen you will discover that results attained and money saved are quite as great in proportion as those attained on the farm by proper machinery and scientific farming.

Modern Kitchen Training Needed.

Though I say it with some hesitation, fearing the reproach of my fellow women who undoubtedly do "work hard," there is a lot of very unintelligent work done by women. If there is anything in the world that we need worse than we need a general religious awakening, it is training in practical and economical domestic work for girls. Somehow, by some means, housekeeping must become more scientific, less hap-hazard, less wasteful and on the whole more cheerful and matter of fact.

Women have been shielded in many secret violations of all laws of sanitation, in bad cooking and clumsy and unsanitary methods, by the very privacy and seclusion of home. It was nobody's business if they fed their families on soggy, greasy food and did their work in a slip-shod, unsanitary fashion.

But year by year we are coming out of this. Our modern notion of sanitation and convenience—our ridding ourselves of unclean things that once cluttered our houses, filling our lungs with dust and disease germs, the clean bare floor, the light, quickly scoured cooking vessel, the fresh air and sunshine idea chasing out the shadows that once lurked in our homes—all of this is good, intensely good, and wholesome.

In a time not far distant we shall see the kitchen of the farm house the most important and interesting place on the farm. For the women will be educated to be the mistresses of a new economy the importance of which can scarcely be exaggerated.

And if woman should continue to dislike the kitchen, to prefer the counter, the typewriter or the general branches of business or the professions, then men will take up the vocation of cooking and cleaning in the household since this all important work by which we live and have our being is the one branch of human industry we never can dispense with while the world stands.

The man who through stinginess or fancied economy refuses his wife a well-equipped kitchen strikes at the rest of his own business, crippling then and there one of the most important factors of the industry he hopes to succeed in.—Agricultural Epitomist.

A RISING FINANCIER.

The old man was perched upon a high stool, figuring up the day's sales of dry goods, groceries, and hardware, when his son came in with a rush.

"Say, Pop," exclaimed the young man, "if I can buy a $300 horse for one-fifty will you take a chattel mortgage on him and help me out with the cash?"

"What kind of a hoss, my son?" inquired the father cautiously.

"Say, 4 years old, sixteen hands high, weighs 1000 pounds, and sound in wind, limb and bottom."

"That sounds good to me, my son, and I want to do all I can to help you along in the world;" and he reached down into the safe for his roll. "How much do you want?"

"A hundred and forty-nine, fifty."

The old man gasped and caught hold of the desk.

"What?" he exclaimed.

"A hundred and forty-nine, fifty. I've got half a dollar."

Slowly the old man shoved the roll back into the safe.

"My son," he said softly, "you are wasting time trading hosses. What you ought to do is to go into the loan and trust business."

HE STAYED ON THE FARM.

Mr. James B. Weaver, Jr., in The World's Work for November, very enthusiastically describes the present increasing prosperity of agricultural conditions of Iowa. The reason for it, he says, is that the farmers aren't afraid to do new things in new ways.

For instance, this is what happened to a farmer who had always been satisfied with "good enough." His son, after a half day's attempt at plowing corn in the muck upon the margin of a ten acre pond situated in the center of a forty acre field, came to the table one noon hour with the startling announcement: "Father, that pond will be tiled or I quit the farm—either the slough goes or I go—take your choice." And the pond "went." Today that boy, riding his gang plow, descends into the old pond basin that three years ago was the habitat of the muskrat, with the very satisfying consciousness that from its virgin soil, the product of untold centuries of accumulation of vegetable mould, shall come for each acre eighty to one hundred bushels of corn.

COMMON SENSE HINTS.

Every one should take a walk daily. Walking improves the action of the heart, lungs and stomach, aids digestion, takes out the kinks and removes the grouch.

For tender and sore feet, bathe in hot water, in which a half tumbler of vinegar and a small handful of salt, has been added. Dry carefully and rub with cold cream. Dusting talcum powder in the shoes will prevent the burning sensation, so prevalent in summer.

FURTHER PROOF.

"Why did you quit your job?"

"The boss said I was a fool."

"But he didn't discharge you, did he? Did you resign just for that?"

"Yes."

"Well, I guess the boss was right."—Toledo Blade.

There is always work,
And tools to work withal, for those who will;
And blessed are the horny hands of toil!
The busy world shoves angrily aside
The man who stands with arms akimbo set
Until occasion tells him what to do;
And he who waits to have his task marked out
Shall . . . leave his errand unfulfilled.
—Lowell.

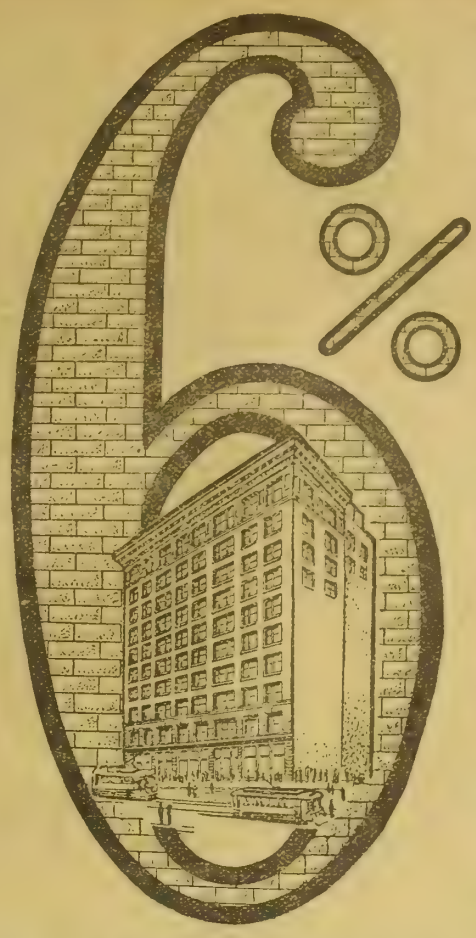
If a man write a better book,
Preach a better sermon,
Or build a better mouse trap
Than his neighbor
Though he build his house in
The wilderness
The world will make a beaten
Path to his door.
—Emerson.

RAISING FOODSTUFFS.

"I know a city man who is making a fortune raising cucumbers on a town lot."

"How does he do it?"

"He buys them from the producers for 10 cents a dozen and raises them to 5 cents apiece."—Kansas City Star.



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Firsts	30
Ladles	25
Country	23

Cheese.

Local Anchor	16
Oregon Daisy	17½@18
Northern Fresh	16@17
Domestic Swiss	18
Imported Swiss	33

Eggs and Poultry.

Egg market is fine, with a slight advance on extras and case counts.

Buying prices f. o. b. Los Angeles are:

Local Ranch Candled	48
Case Count	44
Eastern	32@34
Eastern storage	25@26
Pullets	26

Dealers pay for live poultry f. o. b.:

Hens, lb	12@15
Roosters	8
Broilers	20
Fryers	14
Roasters	14
Turkeys	18@20
Ducks	14
Geese	14
Guinea Hens, doz	4.00
Squabs, doz	1.75

Live Stock.

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs	7
Prime Steers	6
Heifers	6
Calves, lb	6½
Sheep, Ewes, head	4.75
Lambs, head	3.75@4.25
Wethers	5.00@5.60

Potatoes.

Wholesale prices are:

Sweets, Yellow, cental	2.00
Highlands, cental	1.75@1.90
Salinas	2.00@2.10
Lompoc	2.00@2.10
Oregons	2.35

Onions.

Wholesale quotations:

Australian Brown, cental	1.75
Silverskins, sack	1.75@1.85
Yellow Danvers, cental	1.75
White Wax	1.50@1.65
Garlic	5@6

Vegetables.

Wholesale quotations:

Artichokes, Northern, doz	90@1.10
Beets, doz bunches	35
Bell Peppers, lb	4@5
Brussels Sprouts, lb	8@10
Beans, Limas	4@5
Beans, Green and Wax	4@5
Chilis, Green	3@5
Chilis, Red	15@16
Cucumbers, lugs	1.05@1.25
Cabage, sack	65@75
Cabbage, Red, lb	3@3½
Cauliflower, doz	50@65
Celery, New, crate	2.35@2.50
Carrots, sack	90@1.00
Egg Plant	3@5
Horseradish, lb	13½
Onions, Green, doz bunches	15@20
Kohl-rabi, doz bunches	40
Leeks, doz	35@40
Lettuce, crate	90@1.10
Mushrooms, lb	50@1.00
Oyster Plant, lb	15@20
Okra	6@8
Peas, lb	4@6
Parsnips, doz bunches	45
Parsley, doz bunches	25@30
Turnips, sack	90@1.00
Radishes, doz bunches	15@20
Rhubarb, Crimson Winter	90@1.00
Spinach, doz	15@20
Squash, Summer	50@60
Spearmint, doz	25@30
Tomatoes, lug	50@65
Turnips, sack	1.00@1.25
Watercress, doz	35@40

Citrus Fruits.

New Navels	3.50@4.50
Valencias	4.50
Grapefruit	3.00@6.00
Limes, hundred	1.25
Lemons	3.00@3.50

Fresh Fruits.

Wholesale prices on the market are:

Alligator Pears	1.25@1.50
Apples, Bellefleurs	90@1.25
Apples, Spitzenbergs	1.10@1.50
Apples, Pearmains	1.25
Apples, Jonathans	1.90@2.35
Bananas	4½
Casabas, crate	1.50@1.75
Christmas Melons, crate	1.75@2.00
Figs, box	75@1.25
Grapes, Thompson Seedless, lb	3
Grapes, Black Hamburg, lug	65
Grapes, Muscats	75@90
Grapes, Tokays	85@1.00
Grapes, Cornichon	1.10
Loganberries	6@8
Peaches, lug	1.50@1.75
Pineapples	8@10
Quinces, lug	1.00@1.10
Persimmons	1.00@1.25
Pomegranates, lug	75@1.25
Plums, Clymans, lug	1.50
Plums, Tragedy	1.50
Pears, Bartlett, lb	7
Blackberries	12½
Raspberries	10@12
Strawberries	15@20
Watermelons, lb	¾@1

Dried Fruits.

Wholesale prices to retailers are:

Evaporated Apples, fancy, lb	11@11½
Apricots	16@17
Figs, box	1.50@1.75
Peaches	11@12½
Nectarines	12
Pears	12@13
Prunes	7½@15
Plums	10

Beans, Dried.

Wholesale quotations:

Limas	5.75
Black Eyes	4.50@5.00
Pinks	3.85@4.00
Lady Washington	4.75
Small White	4.75
Garvanzas	4.50
Bayous	4.50@5.00
Lentils	6.00@7.00
Mexican Reds	4.75@5.00

Nuts.

Wholesale quotations:

No. 1 Soft Shell Walnuts	15@16
No. 1 Hard Shell Walnuts	13½
No. 2 Walnuts	11
Almonds, IXL, lb	19@20
Pecans, polished	15@17
Pecans, Eastern	8
Peanuts, California	5@5½
Pine Nuts	18

Honey.

Wholesale quotations:

Extracted Water White	8½
Extracted Light Amber	7½
Comb Water White	16@17
Light Amber	13@14
Beeswax	30

Hay.

Buying prices f. o. b. cars Los Angeles:

Barley Hay	14.00@16.00
Wheat Hay	14.00@15.00
Tame Oats	18.00@20.00
Alfalfa	13.00@14.50

Grain.

Wholesale selling price f. o. b. Los Angeles:

Wheat, new, cental	1.75@1.80
Corn	1.70@1.95
Kaffir Corn	1.80
Millet	3.75
Popcorn	4.75@5.00
Egyptian Corn	1.80
Red Oats	2.00
Seed Barley	1.50
Milo	1.95

Feed Stuff.

Wholesale selling price f. o. b. Los Angeles:

Alfalfa Meal	1.15
Beef Scrap	3.00
Bone Meal	2.05
Charcoal	1.95
Cracked Corn	2.00
Cracked Wheat	1.90
Shorts	1.85
Bran	1.60
Oil Cake Meal	2.60
Feed Meal	2.05
Rolled Barley	2.10
Rolled Oats	2.00
Middlings	1.85

San Francisco Market

SAN FRANCISCO, Nov. 27, 191.

Butter.

Extra stock is commanding ready sale, market very firm, partly because of extra Thanksgiving demand.

Prices to trade 2½c in advance of the following Produce Exchange quotations:

California Extras, lb	31
Prime Firsts	28
Firsts	26½
Seconds	24
Storage Extra	28

Cheese.

California Flats	13½@17
Cal. Young America, fy, new	15@17
Oregon, fancy	15½

Eggs and Poultry.

Egg market very firm, with slight advance on storage.

Official quotations of the San Francisco Wholesale Dairy and Produce Exchange are:

Fresh Ranch Extras	51
Firsts	45
Seconds	28
Select Pullets	42½
Storage Extras	28½
Hens	4.00@10.00
Fryers, doz	5.00@6.00
Ducks	5.00@8.00
Broilers	3.00@4.50
Roosters, doz	4.00@9.00
Geese	2.50@3.00
Goslings, pair	2.00@2.25
Pigeons	1.50@1.75
Turkeys	21@23
Squabs	2.00@3.00

Live Stock.

San Francisco prices, gross weight:

Steers	4@6
Cows and Heifers	3@4¾
Calves, lb	5½@6¾
Hogs	6½@6¾
Wethers, No. 1	3¾@4
Lambs	4½@5
Ewes, No. 1	3¼@3½

Potatoes.

Wholesale market quotations:

River Burbanks, cental	1.10@1.25
Alamedas	1.15@1.65
Sweets, cental	1.65@1.75
Salinas Burbanks	1.60@1.85
Northern Burbanks	1.50@1.70

Onions.

Yellow, New	90@1.05
Garlic, new, lb	3@4

Vegetables.

Wholesale quotations:

Asparagus, box	1.00@1.75
Beans, String	7@9
Beans, Wax	2½@4
Limas	8@10
Bell Peppers, lb	7@8
Cabbage, cental	50@1.00
Cauliflower, doz	60@75
Carrots	50@60
Cucumbers, box	1.00@1.25
Corn, sack	50@1.25
Chile, box	35@90
Celery, crate	2.00@2.25
Egg Plant, lb	4@5
Lettuce, crate	75@2.00
Okra, box	65@1.00
Peas, lb	6@8
Hubbard Squash, sack	40@60
Summer Squash, lug	1.00@1.25
Squash, Marrowfat	50@65
Tomatoes, box	50@1.75
Turnips	60@75

Citrus Fruits.

Navels	2.50@3.00
Valencias	4.00@4.50
Grapefruit	1.25@3.25
Lemons	1.50@5.00
Limes, Mexican	4.50@5.00
Tangerines	1.25@1.75

Fresh Fruits.

Apples, Bellefleurs	65@1.00
Apples, Newtons	1.00@1.25
Apples, Spitzenberg	1.50@1.75
Cantaloupes, standard	40@1.40
Nutmegs, large, crate	35@1.00
Figs, double box	1.00@1.25
Grapes, Muscat, lug	1.00@1.25
Grapes, Tokay	50@1.00
Pears, Winter, box	1.50@1.75
Persimmons	1.00@1.50
Pomegranates	1.00@1.75
Quinces, box	50@75
Blackberries, chest	5.00@6.00
Raspberries, chest	10.00@15.00
Strawberries	3.00@6.00
Pineapples, Hawaiian	3.00
Bananas	1.00@1.50
Watermelons, doz	1.25@2.00

Dried Fruits.

FRUITS—1911 crop, f. o. b., carload lots, per lb,: Apples, 8½@9c; Apricots, 13@15½c; Peaches, 9@10c; Prunes, bulk basis, 6@7½c; per lb, 4¾@10c; Figs, 4¼@5½c for White; Pears, 7@11c.

RAISINS—1911 crop: Seeded, per pkg—Fancy, No. 16, 6¼c; Choice, No. 16, 6c; Loose Muscatels, in 50-lb boxes—Standard, 4-crown, 5¼c; 3-crown, 4¾c; 2-crown, 4¼c; Seedless Muscatels, 5½c; Sultanas, 6@6¼c; Thompsons, 7@7½c.

Nuts.

Walnuts, No. 1 Soft Shell	14
Walnuts, No. 1 Hard Shell	13½
Almonds, Nonp	18@18½
Almonds, I X L	17½
Pecans	14½@15
Chestnuts, California	9@11
Peanuts	3@5

Beans, Dried.

Limas	5.90@6.00
Pink	3.00@3.10
Black Eyes	4.00@4.10
Small White	4.10@4.15
Large White	4.00@4.10
Kidneys	5.00@5.10
Garbanzos	2.75@3.00
Bayou	3.60@3.75
Red Mexican	4.40@4.50
Horse Beans	2.75@3.00
Cranberry	4.00@4.15

Hops.

Hops, Coast, 1910	30@40
Hops, 1911	40@45
Hops, Oregon, 1911	40@45

Honey.

Water White, Comb, 1911	15@16
Dark Comb	12½
Extracted White, 1911	8½@9
Extracted Dark	5@6
Beeswax, lb	23@30

Hay.

Scott, Magner & Miller say:

Arrivals for the week ending today have amounted to only 2,500 tons. These are the smallest arrivals that we have had in any week during the current season. Considerable of this amount consisted of alfalfa, which is now practically cleaned up from the river section.

The arrivals during the last few weeks have been remarkably moderate, and not nearly enough to supply our usual current demand. Therefore, it is plainly evident that the dealers' warehouses in the city and the consumers' barns have been heavily drawn on during this time, and therefore stocks of hay on hand in the city have been materially reduced, and at the present time are comparatively lighter than usual.

The market during the week has taken on better color, and a generally firmer and advancing hay market appears plainly now to be in active process of early development. We have had no rains to start the green feed, and we are now experiencing considerable inquiry for hay from interior points where stocks are light, and where much pasture is usually depended upon.

There is somewhat of shipping to Pacific Coast points steadily going on, and while these orders are not large in themselves in the aggregate, they have considerable bearing on our daily market, as they go to absolutely outside points, and relieve the tracks here.

While we cannot quote any definite advance in prices, the whole situation appears to be strengthened by these recent developments.

The alfalfa market has also taken on more strength, as the heavy shipments from the river have now practically ceased, and from now on considerable of our supply must necessarily be drawn from other districts.

Fancy Wheat Hay	19.00@20.00
No. 1 Wheat or Wh & Oat	16.00@17.50
No. 2 Wheat or Wh & Oat	13.00@14.00
Choice Tame	16.50@17.50
Other Tame Oat	11.00@15.00

Wild Oats	10.00@14.00
Stock Hay	6.00@7.00
Alfalfa	9.00@12.00
Straw, bale	60@70

Grain.

Wheat	1.47½@1.52½
Barley, fancy	1.95
Barley, good to choice	1.90
Barley, poor to fair	1.87½
Corn	1.60@1.70
Oats, White	1.80@1.87½
Rye	1.52@1.57½
Mustard, Brown	5½
Alfalfa Seed	17@18
Millet	2¼@2½
Flaxseed	5@5½
Broom Corn Seed, ton	30.00

Feed Stuff.

Alfalfa Meal	15.00@17.00
Bran, ton	26.00@27.00
Feed Cornmeal, ton	38.00@39.00
Cracked Corn	38.00@39.00
Rolled Barley, ton	40.00@41.00
Rolled Oats, ton	37.50@38.00
Middlings	32.00@35.00
Oilcake Meal	42.50@43.50
Cocoanut Cake, ton	25.00@26.00
Mixed Feed, ton	25.00@27.00
Shorts	28.00@29.00

Deciduous Fruit Market

Sacramento, Nov. 25, 1911.

F. B. McKevitt, general manager of the California Fruit Distributors, reports:

The following gives the number of cars of deciduous fruit shipped from all points in California for the week (seven days) ending Friday morning, Nov. 24, 1911:

Pears: Two cars. Although shipment of two cars of this variety is reported this week, none went forward, these cars representing shipments made previous to our last report, but not reported in time to appear there. There are no more pears to go forward, and the movement for the season is now concluded.

Grapes: Ninety-three cars. The shipment of this fruit is now nearly concluded. While it is not possible for us to tell what the future movement will be, in all probability it will not exceed twenty-five carloads, and will consist entirely of Emperors.

Light to heavy frosts are in evidence every morning.

Comparative statement of shipments up to Nov. 18, 1911:

	1910.	1911.
Cherries	250½	216¼
Apricots	289¾	214½
Peaches	2,517¾	2,027
Plums	1,552½	1,366
Pears	2,361	2,322¾
Grapes	4,898½	6,254½
Sundry	17	16¼
Total	11,887	12,417½

Citrus Fruit Market

LOS ANGELES, Nov. 28, 1911.

Navels are being well received in every market. The auctions are still showing Valencias, but shipments have long since ceased. Some Navel shipments have begun from south of Tehachapi, but none of these reached the Thanksgiving market. From now on until Christmas the northern groves will show activity in picking, and nearly every packing house will be crowded to its limit.

Lemons are lower in price than for some time, but the general condition of the market is fair. Foreigns are not coming in large quantities, and fair prices will doubtless continue.

Shipments.

Shipments of oranges to date since Nov. 1, 1911: From Southern California, 83 cars, lemons 386, total 469 cars. From points north of Tehachapi, 1,013 oranges, 43 lemons, total 1,056 cars. Grand total from the state of 1,525 cars. To same date last season from Southern California points: Oranges, 176 cars; lemons, 390; total, 566 cars.

NEW YORK, Nov. 24.—Two cars Valencias and two cars lemons sold. Market strong on Valencias, firm on good stock lemons. Raining.

Valencias.	Avge.
Old Mission, fy, Chapman	$7.85
Old Mission, ch, Chapman	6.45
Golden Eagle, sd, Chapman	5.45
Lady Rowena, Chapman	4.80
Lemons.	**Avge.**
Naralimo	$3.90
Circus	3.35
Whittier	2.85

PITTSBURG, Nov. 24.—Two cars sold. Market steady on oranges, easier on lemons. Snowing.

Lemons.	Avge.
Tulip, T C C, Porterville	$3.00
Palm Tree, A H, Arl	3.60
Palm Tree, A H, Arl	3.80
Commercial, A H, Arl	3.20
Navels.	**Avge.**
Forgetmenot, T C C, Porterville	$3.25

BOSTON, Nov. 24.—One car sold. Raining. Market easier.

Lemons.	Avge.
Watchumna, Cen Cal Ex	$3.33
Lemoncove, Cen Cal Ex	3.40

PHILADELPHIA, Nov. 24.—Two cars lemons sold. Also thirteen cars Florida citrus fruit. Oranges sold 65c to $3.30; average, $2.05. Grapefruit, $3.00 to $5.25; average, $4.25. Market steady.

Lemons.	Avge.
Moose, O K Ex	$4.15
Buck, O K Ex	3.60
Lemoncove, Cen Cal Ex	3.20
Prong Horn, O K Ex	3.70
Watchumna, Cen Cal Ex	3.80
Limes—Halves.	**Avge.**
Red and Blue Label	$1.45

ST. LOUIS, Nov. 24.—Clear, cold. Market weak on lemons. Two cars sold. Sale on Tuesday next, but none on Wednesday.

Lemons.	Avge.
Mission, Johnson F Co	$2.50
Floridina, Johnson F Co	1.95
Dixie	2.90
Festival, Johnson F Co	2.75
Sapphire	3.40

CINCINNATI, Nov. 24.—Cold, snowing. Market declining on lemons; steady on Floridas. Florida Brights, $1.45 to $2.40; Russets, $1.50 to $2.30.

Lemons.	Avge.
Mt. Lowe, A C G, Lamanda P	$3.30
Our Beauty, A C G, Lamanda P	2.15
Coronet, Randolph F Co	3.40
Mt Wilson, A C G, Lamanda P	2.80
Sunset	2.65
Mission Bells, Randolph F	3.00

CLEVELAND, Nov. 24.—One car lemons sold. Market lower. Cold, snowing.

Lemons.	Avge.
Pet, S A Ex	$4.15
Greyhound, S A Ex	3.25
Arab, S A Ex	4.05
Pup, S A Ex	2.50

NEW YORK, Nov. 27.—Six cars Valencias and seven cars lemons sold. Market higher on oranges and lemons.

Valencias.	Avge.
Shamrock, Placentia M O A	$9.25
Caledonia, Placentia M O A	5.80
Albion, Placentia M O A	5.15
Cambria, Placentia M O A	3.95
Lemons.	**Avge.**
Economy	$2.55
Joy	2.15
Clown	3.60
Independent, fy	3.75
Choice	3.10
Squirrel	4.15

PITTSBURG, Nov. 27.—Five cars sold. Market strong on navels, easier on lemons. Cool.

Navels.	Avge.
Adobe	$3.40
Tulip, C C C Ex, Plano	3.40
Vista del Robles, fy, Stewart	3.30
Lemons.	**Avge.**
Coyote, O K Ex	$3.30
Excellent, Santa Paula C A	3.90
Blue Jay, O K Ex	2.35
Sunside, Santa Pala C A	2.95

CINCINNATI, Nov. 27.—Cool. Market steady on lemons and on Florida oranges. Brights, $1.50 to $2.50; Russets, $1.40 to $2.55.

Lemons.	Avge.
Rough Diamonds, V C Limco	$2.35
White Cross, V C Limco	2.35
Bridal Veil, V C Limco	3.10

ST. LOUIS, Nov. 27.—Cloudy, cold. Market weak on Navels on account of other varieties of fruit offering. Weak on lemons.

PHILADELPHIA, Nov. 27.—One car lemons sold; also nineteen cars of Florida citrus fruit. Oranges, $1.30 to $2.75; average, $1.95. Grapefruit, $2.15 to $5.10; average, $4.10. Market easier.

BOSTON, Nov. 27.—Five cars sold. Clear and cold. Market easier on Valencias; doing better on lemons.

Valencias.	Avge.
Orchard, or, National O Co	$5.75
Standard, sd, National O Co	4.40

Get 2 to 6 Lbs. More Milk per Cow a Day

From the Alfalfa You Feed

Alfalfa is a good milk producer—but you can feed it so as to get 2 to 6 pounds more milk per cow a day.

Your cows like it—but it can be made still more palatable. It is a healthful feed—but it can be fed so as to insure your cows being and keeping in absolute health.

Alfalfa fed with Steam Dried Beet Pulp will make every one of your cows earn $10 to $20 more a year. Multiply these figures by the number of cows you own and you can safely count the result as your increased profits.

Alfalfa is an unrivalled feed for the dairy cow—but it should not be used alone. Cows need variety. They are human to that extent. Alfalfa supplies the important element of protein, but, fed alone, it is lacking in carbohydrates—an equal need in a milk producing ration.

STEAM-DRIED BEET PULP
Just Like Roots
Makes More Milk

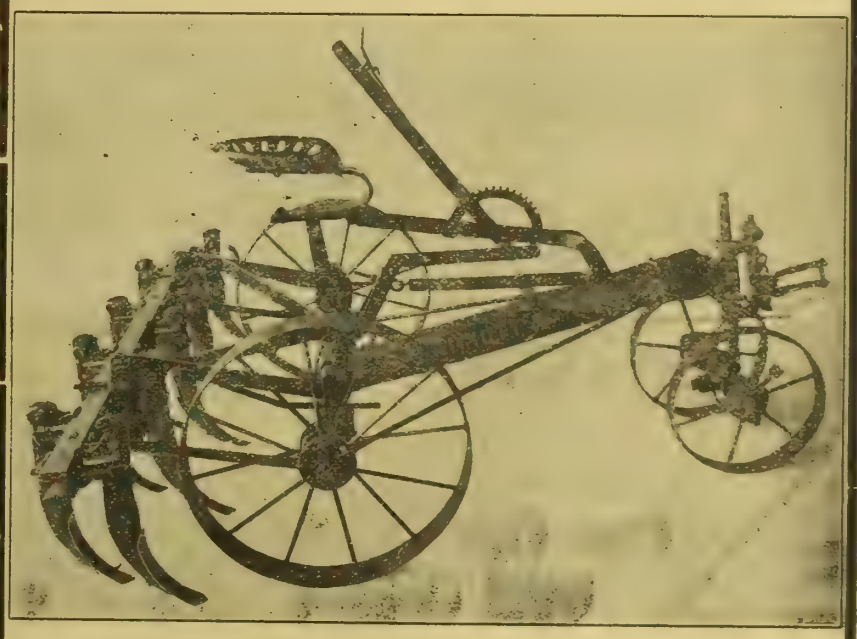
Steam Dried Beet Pulp is the ideal combination with Alfalfa. Used in the proportion of 8 lbs. to 15 or 20 lbs of Alfalfa Hay—all the Alfalfa a cow will eat—gives a ration almost perfectly balanced. It is light, bulky, succulent, easily digested, absorbs water quickly and swells to about six times its original bulk. It is cheaper than bran or rolled barley, and it is a greater milk producer. Steam Dried Beet Pulp is the clean beets dried by steam as soon as the sugar factories have extracted the sugar. Be sure you get Steam Dried. It is uniform in quality and color, never burned or blackened by smoke, always clean and pure. Keeps indefinitely. For convenience in handling, it is packed in 100 lb. sacks.

Steam Dried Beet Pulp is also a splendid food for horses, pigs and poultry, and raisers are placing more and more dependence upon it as a feed for their choicest stock. Steam Dried Beet Pulp is rapidly becoming a staple product among feed dealers. If yours does not handle it, write us direct. We will see that you are supplied.

THE LARROWE MILLING CO., 607 Central Bldg., LOS ANGELES, CALIF.

Be Sure it's Steam Dried.

The Arnott Improved Orchard Cultivator



WE are pleased to be able to announce that prompt shipments can now be made of the **New Arnott Cultivator** as shown above. This has been for years the most popular cultivator in the Southwest and with the **New Fore Truck** it is way in advance of any other orchard tool.

Sold by Leading Dealers everywhere, or write us direct if your Dealer cannot Supply you.

ARNOTT & CO.

EXCLUSIVE MANUFACTURERS

112-118 So. Los Angeles St. **Los Angeles, California**

Buy Holiday Supplies

at Wholesale From McStay

We Carry Everything That's Good To Eat

—as well as Clothing, Hardware, Drugs, Paints and Oils, Poultry and Bee Supplies, Building Materials and General Merchandise

A FEW SUGGESTIONS

COFFEE.

What is more cheering on Christmas morn than an exquisite cup of coffee? Ever try our Aloha Blend? Highest grade of Arabian Mocha and Java, nothing better.

5-lb. Air-tight Tin, $1.93
Savoy, 4-ounce tin, ground ..... $ .12
Sage, 4-ounce tin, ground ..... .12
Curry Powder, 4-oz. Royal ..... .18
Garlic, new crop, fancy, lb. ..... .09
Honey, New Sage, best grade white, 1 gallon 1.35
Cheese, fancy full cream Wisconsin Longhorn, 12-lb. cheese for $2.52; 6-lb. cheese for..... 1.32
Canned Fruit, 1 case of our Extra Standard table fruit, assorted as follows: 6 apricots, 4 lemon cling peaches, 4 yellow free peaches, 4 Hawaiian sliced pineapple, 2 blueberries, 2 plums and 2 pears. Case of 2 doz. cans..... 3.95
Jello, America's most popular desert, all flavors, 2 pkgs..... .17
Cocoanut, Royal Shredded, 1-pound pkgs. ..... .20
Chocolate, Zar ground, sweet, 1-lb. tins ..... .23
Bitter Chocolate, Royal Premium, 1-lb. cakes ..... .32
Royal Cocoa, 1-lb. cans..... .31
Mushrooms, imported, fresh, tin.. .21
Toasted Corn Flakes for Christmas breakfast. This delicious food, Maple Flake, 10c size. Per pkg. ..... .07
Ripe Olives, necessary for every Christmas dinner. Full pint cans, 6 for..... .75
Sweet Pickles, small size, packed in Mason jars. Pints, jar.. .18
Catsup, "Real" Brand, made from the fresh, ripe tomato and pure spices. Pint bottles, doz. $1.25. Each ..... .12
Boiled Cider, boiled down so heavy that it will stand diluting one-half and still have more body than is necessary. Quarts, 20c. Gallon can..... .65
Olive Oil, Royal Pure, for medicinal or culinary purposes. Qt. bottles ..... .73
Barracuda. This famous fish of the Pacific is put up by us in pails of 10 lbs. net weight. Can be freshened over night and can then be fried or baked same as fresh fish. Per pail..... .85
Fancy Norway Mackerel. 18 fish to the pail, nice and fat and juicy. Per pail..... 1.50
Fancy Irish Mackerel, net weight 10 lb. pails, 18 fish, new catch. 5-lb. pails 80c. 10-lb. pails... 1.40
Herring. Novia Scotia Split, large fat fellows. 10 lbs. net in a pail. Per pail 1.00

FREE

One-half dozen nut picks and one cracker, heavy silver plated, packed in a fancy cloth-lined box. Retails for $1.50. We will give one of these handsome sets with each order for the following:

NUT ASSORTMENT.

All latest crop—fancy stock.

25 lbs. Walnuts .....)
5 lbs. Almonds .....)$7.25
5 lbs. Pecans .....)
5 lbs. Filberts .....)

WORK BASKET TEA 30c.

Put up in fancy little bamboo workbaskets containing ½ lb. of choicest 75c grade tea. In ordering, specify whether you want Uncolored Japan, Young Hyson or Green Japan, Gunpowder, English Breakfast, Ceylon or Oolong.

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Do you know that our Unpolished Japan Rice is the fanciest article in the rice line that ever happened? It complies in all ways with the findings of the Pure Food Regulations, and is without question the finest rice ever brought to this market. 100-lb. sack $6.50; 25-lb. sack, $1.63.

10-lb. Sack, 70c.

MISSION FANCY CHOCOLATES.

	Each
5-lb. boxes	$1.60
Nut tops, 5-lb. boxes, all flavors	1.70
½-lb. boxes, fancy box	.22
1-lb. fancy boxes	.41
2-lb. fancy boxes	.76

COLONIAL HAND-MADE CHOCOLATES.

5-lb. boxes, all flavors	1.30
½-lb. fancy box	.19
1-lb. fancy box	.34

FANCY SWEETS

Fancy Glace Bonbons, assorted, fruit tops, 5-lb. box	1.60
Unwrapped Vanilla Caramels, 5-lb. boxes	1.50
Unwrapped Chocolate Caramels, 5-lb. boxes	1.50
Unwrapped Nut Caramels, 5-lb. boxes	1.50
Bonbons, nut top, 5-lb. boxes	1.40

	5-lb. Box, Each
Lemon Drops	$ .85
Licorice Pellets	1.10
Sugar Coated Licorice	1.20
Rock Candy	.85
Conversation Hearts	.80
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A. B. Gum Drops	.60
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Stick Candy, any flavor	.65
Satin Sticks, 4½-lb. jars	.91

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WALNUTS.

	Each
5-lb. bags	$ .95
25-lb. bags	4.25
100-lb. bags	16.00

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5-lb. bags	$1.05
25-lb. bags	5.00
100-lb. bags	19.00

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5-lb. bags	$ .95
10-lb. bags	1.85
25-lb. bags	4.50

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5-lb. bags	$ .60
10-lb. bags	1.15
25-lb. bags	2.75

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5-lb. bags	$1.00
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5-lb. bags	$ .95
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MIXED NUTS.

5-lb. bags	$ .98
10-lb. bags	1.90
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50-lb. bags	9.00
100-lb. bags	17.50

This entire lot for $12.43

When ordering specify ***Lot C. C.***

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5-lb. Box Chocolates, Colonial hand-made, absolutely fine and fresh made daily $1.30
5-lb. Walnuts, new crop No. 1 soft shells, unbleached and not sulphured. .85
Flavoring Extracts, 2 2-oz. bottles, 1 each of lemon and vanilla, triple strength and guaranteed pure ..... .38
1-gal. Honey, latest crop strained sage honey, very heavy. 1.10
5-lb. box Raisins, 3-crown London layers in regulation raisin box, a fine confection ..... .43
2 lbs. Currant, new crop from Greece.. .28
5 lbs. Black Figs, new crop in bulk.. .37
1 Case Vegetables, latest pack, extra quality, containing 12 cans Holland corn, 4 cans Eastern succotash, 4 cans Marrofat peas and 4 cans Refugee cut stringless beans, all for..... 2.20
3 Cans Pork and Beans, Walker's 1-lb. size, in tomato sauce and chile gravy ..... .21
½ Gal. Mincemeat, home-made, all ready to put in the pie ..... .92
1 Qt. Boiled Cider, very heavy; can be diluted with half water ..... .18
10 lbs. Rice, extra fancy unpolished Japan rice; this is the highest grade of imported ..... .68
25 lbs. Sugar, extra white dry granulated 1.95
3 cans Molasses, pint cans Uncle Tom's Genuine New Orleans, for ginger bread, candy, etc.. .24
3 cans Syrup, Delmonico drips, pint cans: a delicious table syrup ..... .22
Citron, new imported 1 lb. ..... .16
Glycerine Soap, Giant 10c size, 3 for..... .15
3 lbs. Christmas Coffee. Our Aloha blend of Arabian Mocha and Java; the very highest grade on the market. Treat yourself to something extra good. Retails 50c a lb. 3 lb. air-tight tin 1.13
Nut Crackers, No. 01, heavy nickel plated; retails all jewelry store 50c..... .28
Face Towels, No. 65. Size 16x34 inches, heavy cotton; retail 15c two for 25c. 6 for ..... .45

Total $12.43

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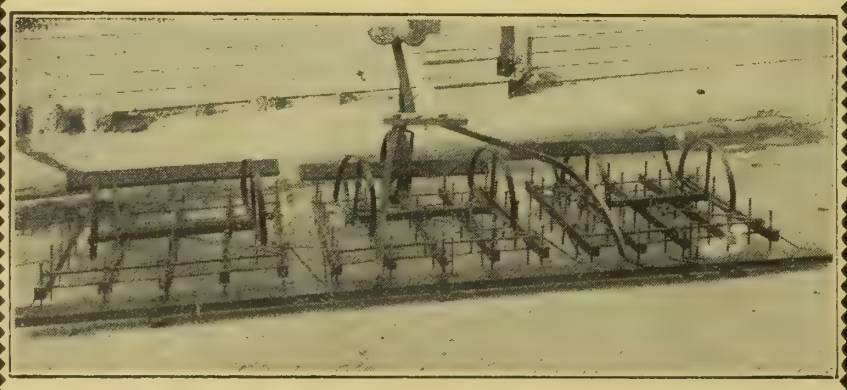

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Cleaning attachment, per section	6.50
Riding cart for one, two, three or four sections	10.50
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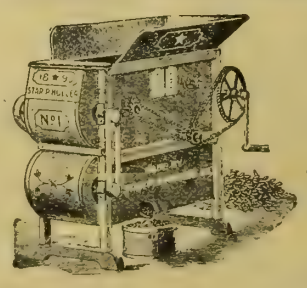

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Vol. XXXVII. No. 23. LOS ANGELES: THURSDAY, DECEMBER 7, 1911 One Dollar the Year

The Advance of Denmark Under Co-operation

By Thos. Wm. Cowan, Taunton, England

The principle of co-operation has been adopted in every part of Denmark and to this and the wonderful system of education available for its people is due the great progress of that country during the past thirty years.

The area of Denmark is 14,844 square miles (9,375,403 acres), with a population in 1906 of 2,588,919 (174 per square mile), nearly one-half of whom live exclusively by agriculture. The exports to the United Kingdom of agricultural produce in 1909 amounted to £18,768,417, about $93,000,000.

The first co-operative creamery was organized in 1882, and the dairying movement has made such progress that in 1902 there were 1150 co-operative dairies with a membership of 148,000, and dealing with 750,000 cows. The amount invested in the erection and equipment of Danish creameries exceeds £1,500,000 sterling.

The first bacon factory was erected in 1887; there are now over 30, and the progress of co-operative work in the bacon industry is quite as striking as in the case of butter.

The egg industry has also improved immensely owing to the application of the co-operative principle to collecting, grading, packing and export of eggs, The "Dansk Andels Aeg-export" was founded in 1895, and has 400 societies affiliated with it, with 30,000 members. The eggs are purchased from the farmers by weight irrespective of size and are packed by the society. The packing is done by women, while the men make the boxes and nail on the lids. Every egg can be traced to the original supplier as the collector puts a number on the egg, and any member guilty of sending a stale egg a second time is expelled from the society. Dirty eggs are not accepted.

The production of these commodities of the breakfast table, namely butter, bacon and eggs, practically absorb the whole energies of the rural population and the tendency has been not only to increase the actual output, but to enhance the quality of the product. All these items of export are subject to constant supervision of central committees watching all that concerns the efficient management, and supplying the most up-to-date information as to methods of production and access to markets. There is no "cutting prices" as the understanding between the whole of the Danish creameries is such as to raise the standing of Danish butter in the market rather than depress it.

In addition to the above branches of agricultural industry, the spirit of association manifests itself everywhere. There are co-operative societies for the improvement of the breeds of cattle, pig improvement, poultry improvement and distribution, purchase of agricultural requirements, joint purchase and use of agricultural machinery, and in various other forms connected wtih agriculture.

All these societies are self supporting, and, with the exception of the agricultural societies, receive no grants from the government. There is no such thing as "taking of shares" in Denmark. The preliminary organization is started by ascertaining (a) the quantity of raw material available in the particular district for the purpose of the society, and (b) the extent to which the farmers were prepared on the principle of "each for all and all for each" to pledge themselves to secure the necessary capital to enable the business of the society to be successfully carried on, and, this being accomplished, in giving binding effect to the twofold agreement, namely, that they should only dispose of their milk, pigs or eggs through their own society, and that they should be jointly and severally responsible for its liabilities.

There is a distinct organization for each form of society, and a separate body is always formed to take charge of each kind of work. At the same time business relations are arranged between these district societies, so that, for example, a man who obtained manures and seeds through his agricultural supply society could have the amount deducted from his milk account at the creamery.

There are hardly any debts due to merchants by the farmers, as, in consequence of the regular receipts for their agricultural output from the various cooperative societies, the system of monthly payments has become almost universal. This places the Danish peasant in a position of security and independence which adds materially to his efficiency as an agriculturist and to his social status as a citizen.

The success of the Danes may be attributed to (1) the universal application of the cooperative principle to every department of agriculture, and the invariable obligation imposed upon the members in all societies to support an institution founded by themselves and maintained in their interest against all temptations of "rings" or "syndicates." (2) The practical interest which the government takes in these cooperative organizations. Conferences of cooperators are held in various districts, a public officer being invited to attend them, whose function is to advise the minister for agriculture, and all questions of public policy affecting agriculture in Denmark are framed in accordance with the opinion advanced by these conferences. At the same time the various experts employed by the government are in constant touch with these societies, and are always available to give such technical advice as may be useful in the farming industry. (3) The unremitting industry and zeal of the people themselves.

The smaller societies federate and make up one large society for purchasing. As an example of working which applies to all the societies, the "Funen Cooperative Feeding Stuff Society" can be taken. It is made up of forty-seven cooperative dairy societies, which guarantee 20,000 cows. The guarantee consists of two kroners per cow, but no society becomes a member under a guarantee of 300 kroners, and are bound to purchase their requirements for a period of three years, and each individual farmer is obliged to purchase at least 300 pounds of feeding stuffs in the year. The yearly trade is over one and a half million kroners (£83,300).

These societies are independent of government aid.

The agricultural associations known as "Landhoforeninger" receive substantial assistance from the government and deal with almost every phase of agricultural development. The societies are cooperative in character, and the members are bound to observe the obligations imposed by the rules, and the society is supported by the common law of the land in recovering penalties for violation of the regulations made for their government. No society is recognized as such unless it has a membership of 150 farmers who contribute at least 300 kroners annually to its funds, and all are obliged to furnish a balance sheet and full report of their operations to the minister for agriculture before the first of April.

There are 107 of these associations, with 64,800 members, who contribute 160,000 kroners annually to the societies' funds. The amount voted by the government for grants is aout £10,000, allotted as follows:

	Kroners.
Agricultural and live stock experts	15,400
Premiums to cattle shows	75,000
Supervision of milch cows	3,600
Premiums and traveling expences for farmers	72,800
Local experiments and demonstrations	7,600
Other purposes	700

The government also gives subsidies for improvement in their breeding of cows, horses and pigs. There is no special tax, but the money is paid out of the amount allotted to the Department of Agriculture. All the institutions organized in the interest of agricultural production have, as a fundamental principle of their credit, unlimited liability. The government gives agricultural credit for small peasant proprietors. It has placed five million kroners (about £280,000) at the disposal of the farmers. Should the farmers of a village wish to borrow money, each for his own object, they form a society which can borrow money from the government on the joint guarantee of the members. The limit of loan to a society is 6,000 kroners (£333). The state pays the taxes on the loans, and has allotted a certain sum to pay for the expenses incurred in the organization of these societies. The maximum of any loan to an individual farmer at any one time is 50 kroners (about £2.15). He is obliged to repay this loan within nine months, and the rate of interest is 4½ per cent, or 1 per cent over that which the society pays the government. The money is repaid to the government at the end of nine months, but prior to the repayment the members of the society may state how much they wish to borrow after repaying the original loan, and in this way a certain amount of the capital borrowed from the government is used as a floating capital, being payment made by the right hand and received back by the left, between the society and the state. There is no control by the societies or the government as to the manner in which each individual applies his loan. These loans, however, are invariably applied to purposes which result in a profit to the borrower.

There is a very useful book published in Rome, Italy, by the Italian government, entitled "Bulletin du Bureau des Institutions Economiques et Sociales," Annee 1, Volume 1, No. 1, 30th September, 1910. On page 179 and following pages a great deal of information is given on cooperation in Denmark. In this it is stated that in 1909 (to which date statistics are given) there were 154,568 properties, on which there were 1,059,956 cows supplying cooperative creameries, all working without pecuniary assistance from the government.

THE RACE TO THE SWIFT.

Who wouldn't like to be a farmer if he could live in Iowa and unlock the state's treasure houses in the manner described by Mr. James B. Weaver, Jr., in the World's Work for November? Does the occupant of the city flat excuse his purchase of an automobile by pleading the necessity of a spin to the country after supper for fresh air? The Iowa farmer is not slow to take the hint. With him it is change of scene. Stand aside, for here they come every evening after supper down ten thousand highways—"Bill" at the wheel, and by his side "Dad," "Mother," and the remaining household. No delay for elaborate toilets, with shirts open at the throat, bared heads and sleeves rolled back, off they go twenty to thirty miles, to town and back, forgetting for two blissful hours in their careening joy-wagon the heat and fatigue of the day.

DON'T BUY AN AUTOMOBILE

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DUROCAR

The strongest and easiest riding car in the world

Made in Los Angeles by experienced men who understand the conditions of climate, mountains and desert.

4 and 5 Passenger, 35 H. P., $2,000 fully equipped
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Nitrate of Soda

We are prepared to furnish Nitrate of Soda at the lowest market price, and will be pleased to quote prices and furnish literature to anyone interested, on application.

Dr. R. R. Snowden will at our expense, advise our customers as to how to use the fertilizers for the best returns, even if the soil has to be analyzed to do so.

State what crops you are interested in, and mention the CULTIVATOR.

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EUREKA LEMONS VALENCIAS WASHINGTON NAVELS

——Clean Sturdy Trees——

John M. Carse

TELEPHONE Home 401

121 No. Wilson Avenue ALHAMBRA

Citrus Trees for Spring Planting

For 1912

9000 Late Valencias 5000 Washington Navels
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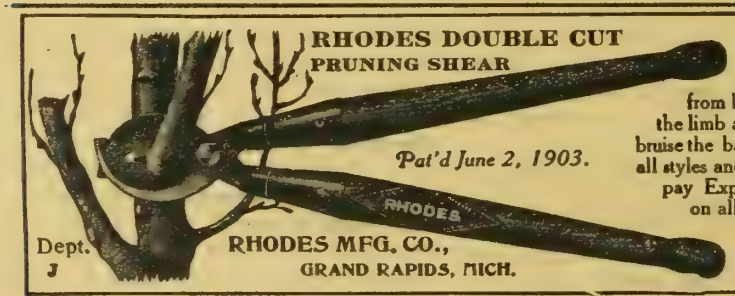
The trees are yearling buds on Florida Sour Stock, of thrifty growth and free from scale.

O. HANDY, Phone 33 Y 2 1-2 Miles N. E. of Plaza ORANGE, CALIFORNIA.



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Orange and Lemon Trees

Fifty Thousand High Grade Trees

SMITH AND CLARK COMPANY

PHONE 37 R 2 Orange, California R. D. 1

CITRUS TREES

Navels, Valencias, Eureka Lemon, Grape Fruit and Tangerine 1 and 2 Year Buds. Sour Orange Seed-Bed Trees, 1 year.

We are offering a large stock for season of 1912. Our trees are equal to the best. Write us.

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WINDELER'S PLANING MILL AND COOPERAGE

GEO. WINDELER, Prop.

Water Tanks, Wine Tanks made from carefully selected stock by careful and experienced workmen. "Tanks that are well made last a long time." It will pay you to get my prices before buying.

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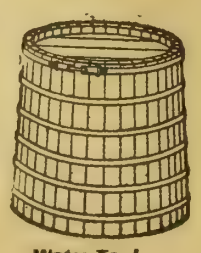
144-154 Berry St., San Francisco, Cal.



Water Tank

Citrus and Tropical Fruits

SPLITTING ORANGES.

Mr. Carroll B. Smith of Redlands writes:

"I was glad to notice Prof. Coit's article on the "Splitting of Oranges," in the last Cultivator, and am enclosing herewith an article on the same subject which was published in the Los Angeles Times in November, 1901.

"It differs a little from Prof. Coit's presentation, but the general conclusions are the same in both articles, namely, that weather and climatic conditions are responsible. Prof. Coit has added considerably to my article by the scientific way he treats the subject, but, at the same time, my article covers certain conditions he does not mention under which splits occur and do not occur, which might suggest a remedy."

The Splitting of Oranges.

"Certain characteristics are found by observation to be peculiar to all split oranges:

"(1) Splitting commences at the time of year when fruit is about to turn.

"(2) The most splits are on the south and southwest side of tree.

"(3) The splitting starts, and rind is thinest, at the blossom end.

"(4) After an orange is once split the skin cannot be pressed together again without breaking the flesh of the fruit.

"(5) Trees which show the most vitality and strongest feeding power have the most split fruit.

"There may be rare exceptions to the foregoing statements, but not enough to disprove them as general rules. Now if these are true and general characteristics of split fruit can we not find a cause?

"The circulation of nutriment through the orange is first from the stem through the core to the blossom, while the flesh is fed next and the skin last. Possibly skin and flesh are fed together from the membrane between them, but in either case ripening may and does commence on the outside without interfering with the continuing development of the fleshy parts. And it is also true that the navel may remain green long after the color is completed, and the orange has ceased to increase in size. I have measured several dozen of fully-colored oranges with green navels; tagged them with the date and measurement, and two months later found the navel turned yellow and the oranges average increase in circumference to be only one-eighth of an inch, an inconsiderable amount. This looks as though ripening might go on beginning at the outside of fruit while growth continued on the inside. The last parts fed will ripen first.

"To state this fact in another way: The evidence of assimilation is the presence of chlorophlyll or green coloring matter of leaves, stems, and rind of fruit. Now when fruit begins to color the green disappears, or what is the same thing, assimilation ceases. When assimilation ceases so does growth. The navel remaining green long after assimilation and growth have ceased in the rind shows that growth is continuing on the inside and if it proceeds too far will split the fruit. Especially is this the case when the rind begins to lose the green color. Growth is evidently less rapid there than in the fleshy parts. There is a check, partial or complete, in the growth of the rind, but less of a check if any in the fleshy parts. This is evidenced again by the fact that fruit once split cannot be pressed together again without displacing some juice or flesh. The development of the rind certainly does not keep pace with the growth of the fleshy parts when once it is split. Of course the edges of split rind turn yellow most rapidly and we would expect growth to cease there, but in a new split on an orange quite green, edges and all, you cannot press the open part together.

"If chlorophyll is the evidence of assimilation (this seems to be a fixed rule in the biology of plants) and the navel remains a deep green while the rind shows partial coloring or light green, it certainly looks like unequal growth in the parts. The part which has ceased to grow must give way to the other.

"Trees which show the most vitality and strongest feeding power have the most splits. The Washington Navel is a vigorous grower and feeder and will have more split fruit than St. Michaels, Mediterranean Sweets or seedlings. Old stocks budded over show the greatest number of split fruit in the first few crops. This is because the root or feeding power of the tree is large in proportion to the "head" it has to feed. The vitality of that tree is exceptional and growth persistent. Young stock on virgin soils also has exceptional vitality, and the first crops will have a large proportion of split fruit.

"Now as to the cause: Suppose that about the time fruit is well developed and ready to turn, the weather has been warm and all conditions favorable to growing, there comes a cold night and day, so that growth receives its first check, will not this show at the extremities first? The weather has not been cold enough, we will suppose, to chill the earth and sap. The fruit being ready, may turn, this lessens assimilation and growth in the rind. The earth is still warm and sap has not been chilled so growth may continue with inside parts. This would cause splitting. Such a condition might be repeated. Growing weather might alternate with checking weather several times so that fruit developing a week or two later would be caught and splitting would be excessive. If the whole tree could be put in dormant condition at once when fruit is ready to turn there would be no splitting because the check to the sap and to the growth of fleshy parts of fruit would follow too soon. I have seen trees in isolated places as a corral or flower bed, where they did not get the best of care, carrying a full load of fruit, apparently healthy, and not have a split orange. This might be because the tree has not the same persistent growth and vitality; the earth is not as warm, being uncultivated, so when the first check comes the whole tree is ready to stop growing.

"Such I believe to be a cause. Let it be conclusively established or refuted and the remedy will be a matter for further thought and investigation."

A TIGHT SQUEEZE.

Stella—Can you dress within your income?

Bella—Yes, but it is like dressing in a berth in a sleeping car.—Harper's Bazar.

BLACK ROT OF NATAL CITRUS FRUITS.

Some interesting results, arising from an investigation into the cause of a black rot of various citrus fruits in Natal, have recently been published in Science Bulletin No. 4, of the Transvaal Department of Agriculture, entitled On the Structure and Life-History of Diplodia natalensis, n. sp., by I. B. Pole Evans, M. A., plant pathologist to the Transvaal department of agriculture.

External Symptoms of Disease.

The disease first appeared on lemons shipped to the Transvaal from Natal, but subsequent investigations showed that it could occur on all forms of citrus fruits. The account of its symptoms, as given by Pole Evans, is as follows:

"The first evidence of disease is a translucent or watery appearance of the rind, usually around the stalk end of the fruit. This is quickly followed by a softening, and gradual brown discoloration of the affected tissue. The brown discoloration, when it has once appeared, spreads very rapidly and uniformly over the whole fruit, which then becomes distinctly sticky to handle, while at the same time a greenish-brown liquid exudes from it where it comes into contact with anything on which it is resting. Very soon after this a dark olive-green to black discoloration appears at the stalk end, and from thence encroaches over the whole fruit, until it is converted into a black, mummified mass, with a very wrinkled and shrivelled surface.

"Fruit in this condition, if left exposed to a dry atmosphere, soon dries out, and remains indefinitely a hard body, exceedingly light in weight, but retaining to a considerable extent its original form and shape. The loss of weight in the fruit can be detected almost as soon as the brown discoloration appears. When a dry lemon is cut open, the whole of the pulp has become absorbed, and nothing remains but a dark, fibrous mass of tissue.

"The pips and radiating septa are usually covered with a dull greyish growth. On examining the external black discoloration more closely with the naked eye or with a hand lens, it is seen to be due to the formation of a number of small black patches under the epidermis of the rind. As these dark masses increase in number they run one into another and coalesce, so that the whole surface takes on a homogeneous dark color.

"If affected fruit is kept under moist conditions, a very different state of affairs occurs. The surface very soon becomes studded with innumerable tufts of hyphae, at first greyish-olive in appearance, but which later on turn darker colored and then eventually completely invest the fruit with a dark felt-like mycelial growth."

Cause of the Disease.

The disease is due to a species of Diplodia, believed by Pole Evans to be different from any previously described, to which he has given the name Diplodia natalensis. The fungus produces scattered pycnidia beneath the rind of infected fruits. The spores are biseptate, dark olive-brown in color, and very similar to those of the cacao die-back fungus, except that they are marked with bands running along their length. In artificial cultures, under damp conditions, the pycnidia are produced in small hummock-like protuberances covered with a thick felt of dark olive-green hairs; this is similar to the manner in which those of Thyridaria tarda are produced under similar conditions. The resemblance between these two fungi is strong, though there are some points of difference.

Infection Experiments.

These left no doubt that the fungus Diplodia natalensis was the cause of the disease described. They further showed that the fungus was capable of living on apples and peaches, and of producing characteristic pycnidia upon these at the end of ten days, although there was no formation of these organs on infected lemons at the end of fourteen days. In fact, on lemons and oranges, pycnidia only occur on the black sclerotial bodies found in the infected fruit after such bodies have passed through a resting period of two months. If after this, the fruits are exposed to the right conditions of temperature and moisture, pycnidia will develop.

Another set of inoculation experiments on lemons gave rise to some points of interest. It was found that infection occurred on placing spores of the fungus upon the stalk scar, both when this was punctured with a sterile needle and when it was left untouched. Furthermore, it was observed that spores placed on a slightly wounded or abraded surface of the rind could cause disease, but that they could not do so when the rind was intact. Another point revealed by the experiments was that in many cases there was an incubation period of from ten to fifteen days between the date of infection and that of the first appearance of the disease. Thus fruit apparently quite sound might be packed in a case and develop the disease in transit.

Preventive Measures.

The chief source of infection is the mass of spores formed in the pycnidia arising on mummified fruit left lying about the orchards. The principal means of reducing the prevalence of the disease must, therefore, lie in destroying, by heat, the fungus contained in all such mummified fruits, which must be carefully collected and removed from the orchards for the purpose.

A fungus very similar in appearance and possibly identical with that found in Natal has recently been shown to cause gumming of citrus and peach trees in Florida. An account of the inoculation experiments carried out to determine this was published in Mycologia, Vol. III, p. 151, under the title A Gum-Inducing Diplodia of Peach and Orange, by H. S. Fawcett and O. F. Burger. It was shown by cross-inoculation that the fungus on citrus caused gumming on peach trees, and vice versa. The same fungus also occurred on rotting fruits of orange and grape fruit, while inoculations with it caused softening and decay of oranges, lemons and apples, in the space of one to two weeks. In the case of the two former fruits it was only necessary to place the mycelium on the stalk end to induce decay, while the fungus could subsequently be recovered from the diseased fruit. The authors are of the opinion that the Diplodia causing the gumming may well be the same as D. natalensis, though the point is not yet established.—Barbadoes Ag. News.

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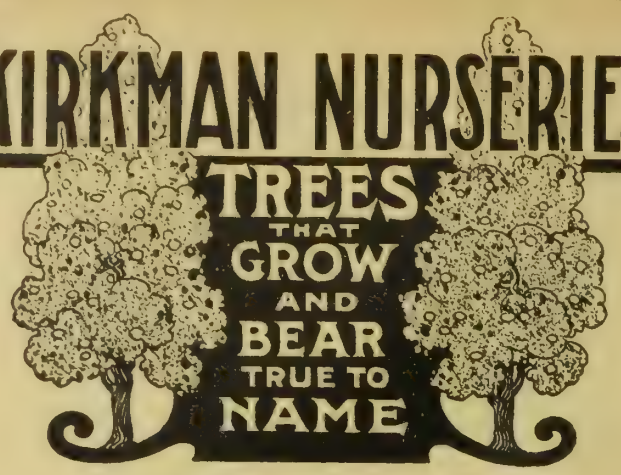

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Deciduous Fruit Culture

SPRAY FOR BLACK SPOT CANKER.

Apples having this disease have been examined this week at the Washington State Experiment Station and found to be distributing spores. Spores are also distributed at this season from the cankers on the limbs and trunks of diseased trees. These spores are carried by insects, water drops and wind to other parts of the same tree and to neighboring trees. Many of them will develop new cankers. To prevent this spread of the disease, affected orchards should be sprayed as soon as possible after the apples are picked. The spray solution used may be either Sulphur-Lime (specific gravity 1.02), or double strength Bordeaux, as preferred. As soon as the leaves fall another spraying should be given. The spraying should be supplemented by a systematic destruction of all disease-spotted apples. Much of the infection of stored apples is brought about by mixing diseased apples with the good fruit during picking and storing. Observations recently made by experiment station men at Chehalis indicate that flies may be instrumental in spreading the disease. Under a number of trees were decaying windfalls, many of which showed the characteristic Black Spot rot. During the sunny part of the day flies and other insects were continually flying to these apples and later flying off into the trees. If the windfalls were carefully gathered and destroyed, this source of infection would be eliminated.

It is comparatively easy to distinguish the Black Spot rot from the Fruit Spot, which is also common in the orchards of the state. The Black Spot rot has a small point or opening in the center. If the spot is small this will be surrounded by a narrow border of light brown. If the spot is larger, concentric rings of light brown will surround the point and the spot will be darker brown around the edge, which is rather sharply defined. The spot also seems flat and shallow as compared with the Fruit Spot infection. Spots which are producing spores are usually one-fourth inch to one-half inch in diameter.

TUMBLING MUSTARD.

(Cisymbrium altissimum.)

This weed is popularly called in eastern Washington the "Jim Hill" mustard. It is properly known as the Tumbling mustard. It is an annual, that is, it goes to seed each year and dies to the ground. The plant grows to an extremely large size, making a real tumble weed. It bears a large number of seeds, which are oily and therefore live a long while in the soil.

The best way to fight this weed is to go onto the land in the fall and disk it lightly, thus covering the seeds just enough to make them sprout. Do not plow, as this will bury the seeds to such a depth that most of them will not grow promptly, but will lie in the ground for years, and as they are brought up by each successive year's plowing will fill the field with weeds. If the land is lightly disked, the fall rains will usually cause the seed to sprout. If the land should dry off enough, the sprouted weeds may be killed by disking or harrowing, or any other sort of weed-killing cultivation, during the winter. But if, as is more probable, the land is too moist to cultivate in the winter, go on the land in the spring as late as possible with a weed-killer and kill the young weeds. After this the land may be plowed and planted to some spring crop such as barley or oats, or it may be summer fallowed. The greatest danger is in burying the seeds. Otherwise, the weed is not hard to kill.—Bul. 6, Wash. Ex. Sta.

BIRD INVESTIGATIONS.

Secretary Wilson has just received some interesting and valuable information from the biological survey by a special investigator.

The study of bird migration has been continued and has resulted in the accumulation of much valuable information on the distribution, breeding times, and habits of birds. This information is of value as a basis for legislation having for its purpose the proper protection of game and other birds. A bulletin is in preparation on the distribution and migration of herons, cranes and rails, similar in scope to the one recently published on the shore birds. A report on the wood rats of the genus Neotoma has also been received, and for the first time these native mammals are fully characterized and their distribution given. Maps show the range of every known species inhabiting North America, and a brief account of their habits and economic status is given.

By direction of Secretary Wilson the survey in co-operation with the University of Iowa sent an expedition to Laysan Island. The members of the party acted as wardens during their stay and secured specimens of the flora and fauna, some for the biological survey, the rest to form the basis of a panoramic representation of the bird colony for the University museum. A special representative of the department who had formerly visited Laysan, accompanied the expedition, to make a report on the present condition of the birds as compared with eight years ago. From this report it appears that none of the species nesting in the island has been exterminated, but there has been considerable decrease in the number of albatrosses.

Depredations were committed on the Tortugas Reservation by fishermen, who, during the winter visited Bird Key and stripped the warden's quarters of everything movable, including materials stored there for repairs and improvements. The co-operation of the navy department has been secured and it is believed that future trespasses on the island will be prevented.

The Educational Department of the Y.M.C.A. of Portland, Ore., will continue a series of agricultural lectures during the coming winter. This has been a regular custom with this or- apple growers of the Hood River Valganization for many years. "The ley" will be the first topic discussed.

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CULTURE OF PAPAYA.

The Department of Public Instruction of the Philippine Bureau of Agriculture has issued the following cultural directions for papaya, written by P. J. Webster, Horticulturist:

Seed Bed.

The seed bed should be prepared by thoroughly pulverizing the soil by spading or hoeing the ground well, and the clearing away of all weeds and trash. Sow the seed thinly, about one to two centimeters apart, and cover the seed not more than one centimeter with soil, then water the bed thoroughly. In the dry season it is well to make the seed bed where it is shaded from the hot midday rays of the sun, under a tree; or it may be shaded by the erection of a small bamboo frame on the top of which are placed grass or palm leaves. If the seed is planted during the rainy season, a shed of palm leaves should always be put up over the seed bed to protect the seed from being washed out and the plants from being beaten down by the heavy rains.

Transplanting.

When the plants have attained a height of about seven to ten centimeters, they are ready to be transplanted to the place where they are intended to grow.

Unless the transplanting has been preceded by a good rain, the plants should be thoroughly watered before they are removed from the seed bed. In order to reduce the evaporation of water from the plants until they are well established in their new quarters, about three-fourths of the leaf blades should be trimmed off.

In transplanting, take up the plants with so large a ball of earth that as few plants are cut or disturbed as possible. Do not set out the young plant deeper in the new place than if it grew in the nursery; firm the soil well around the roots, making a slight depression around the plant, and water it thoroughly.

In order to protect the tender plant from the sun until it is established, it is well to place around it a few leafy twigs at the time of planting. It is well to set out three plants to each hill, and as the plants grow up and fruit, to dig out the males or the two poorest fruiting plants.

If the plants cannot be set out in the field at the time indicated, transplant them from the seed bed to a nursery, setting out the plants about twenty to thirty centimeters apart in rows a meter apart, or more, to suit the convenience of the planter. While the best plan is to set out the plants in the field before they are more than thirty centimeters tall, the plants may be transplanted to the field from the nursery with safety after they are more than 1.5 meters high, provided that all except young and tender leaf-blades are removed, leaving the entire petiole, or leafstalk, attached to the plant; if the petiole be cut close to the main stem, decay rapidly enters it. If the entire petiole is left, it withers and drops, and a good leaf scar has formed before the fungi have had time to work their way from the petiole into the stem of the plant.

Treatment of Old Plants.

When a plant has grown so tall that it is difficult to gather the fruit, which also at this time grows small, cut off the trunk about seventy-five centimeters above the ground. A number of buds will then sprout from the stump and will form several trunks that will bear fruit like the mother plant in a short time. These sprouts, except two or three, should be cut off, for if permitted to grow the fruit produced will be small.

Seed Selection.

Seed should be saved from the best fruits only. By this is meant not so much a large fruit as one that is sweet and well flavored, with a small seed cavity and few seeds; oblong fruits should be preferred to roundish ones in saving seed, as they grow on plants having both stamens and pistils in the same flower, and these being, very largely, self pollinated, the seeds produced from such flowers are more likely to reproduce their kind than the

(Continued on Page 597.)

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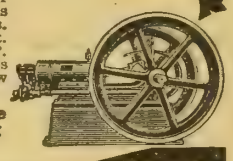

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General Agriculture

SOME FACTS ABOUT PARCELS POST.

We shall not get clear ideas on the subject of parcels post until we study the methods by which packages of eleven pounds or less are handled. In our country the express companies have a monopoly of this business; in fact, a monopoly of carrying packages weighing over four pounds. It must not be forgotten that we have parcels post. We have had it for many years, but it is limited to a four-pound package, and the rate is sixteen cents a pound. No other country of which we have any knowledge has a parcels post of this limited character and high cost.

In Other Countries.

In European countries the general weight is eleven pounds, with certain regulations as to size. It may be interesting to study rates in some other countries. The highest foreign rate is in Cuba, where the cost is 10 cents up to five pounds and 6 cents for each additional pound. It may be said that Cuba is a small country. So it is; but Australia is a large country. There are six states in it. Its intra-state rate is 12 cents for one pound, 18 cents for two, 24 cents for three, and 6 cents for each additional pound up to and including eleven pounds, the parcels rate for this being 72 cents. The inter-state rate is 16 cents for one pound, 28 cents for two, $1.36 for eleven pounds. The population of Australasia is only one-tenth as dense as that of the United States.

We Oblige Others.

The most striking feature of the present situation is that the United States has postal treaties with twelve countries or parts of countries in Europe, nine in South America, seven in Asia, three in Africa, five in Canada, and with nine groups of islands, and you can send packages up to eleven pounds to any postoffice in any of the above mentioned countries at 12 cents a pound; while our parcels post rate is 16 cents a pound for any distance, and limits the size to four pounds. In other words, a Jap in Omaha can send a package to Japan at 12 cents a pound, while an American in the same city would have to pay 16 cents a pound to send a package to Lincoln. An eleven pound package would cost $1.32 to Japan, but $1.75 to Des Moines—and to send it by mail to Des Moines it would be necessary to make it up in three packages.

Another surprising fact is that the express companies are under contract with the postoffice department of Great Britain to carry an eleven-pound package even clear across the United States for 25 cents, whereas they would charge an American citizen somewhere around three dollars for carrying the same package from New York to Seattle.

Another Fact.

In Europe, where they have parcels post, they have no express companies. The railroads transport all packages above eleven pounds, and do it quite as satisfactorily and at much less relative cost than our express companies here do the business.

It should soak into the minds of both the railroad people and the citizen, that the express companies are simply parasites on the railroad business, and indirectly one of the reasons for the plea for advanced rates on the part of the railroads. A lousy calf or pig must have more feed, if it is to thrive, than one that is clean, so much of the nutriment of the feed goes to the louse. So the railroad that is supporting an express company must either have higher rates or give poorer service. The louse thrives whether the calf does or not. That the express companies are thriving is evident from the fact that the Wells-Fargo Company, as shown by recent investigation, earns a profit of about 70.7 per cent on its capital, largely water. The actual profit on the capital that is really invested in the business of the American Express Company is 105.6 per cent.

Why?

Our readers can easily guess why the railroads submit to this parasitism. It will probably be found on investigation that the men who really own the railroads are heavy stockholders in the express companies. The common stockholder may lose by reason of a lousy railroad, but the men who own the express company fatten by the process.

It is worth while looking into the relations between the railroads and the express companies. The railroad has a contract with the express company. The louse has no contract with with the pig or calf. This contract generally provides that the express company pay to the railroad about 50 per cent of its gross earnings—to be accurate, 47.7 per cent. In other words, the express companies get about half of the total earnings for collecting and distributing the express packages hauled by the railroads. The rate charged, according to the testimony of express company officials, is about two and a half times the first-class freight rates on the same class of goods to the same point. In many cases, however, investigation shows that they are from three to five times these rates. The express rates are supposed to be based on the rate for 100 pounds. When the rates are attacked, the companies simply reduce the minimum, and in this way have been able to advance their rates very materially during the last ten years.

More Discrimination.

When a strike occurs among the express employes, as recently in New York, the whole express business of the country is demoralized, involving very heavy losses to merchants and farmers; while parcels post packages coming by mail from other countries were delivered promptly. In this, as in so many other ways, the people of the United States treat citizens of foreign countries better than their own.

Whenever anything is said in favor of parcels post, the bogie that is brought up to alarm the merchant is the mail order house. This bogie will cease altogether to be a bogie when we realize that no country that has parcels post is bothered by catalogue or mail order houses, or at least we hear of no complaint about them.

We studied this parcels post question pretty thoroughly when on the Country Life Commission, took testimony all over the United States, and we came to the conclusion then that somebody was putting up a large amount of money to defeat parcels post, and making use of it in the way of organizing the country merchants against this movement. Who it is we are not prepared to say, or at least prove.

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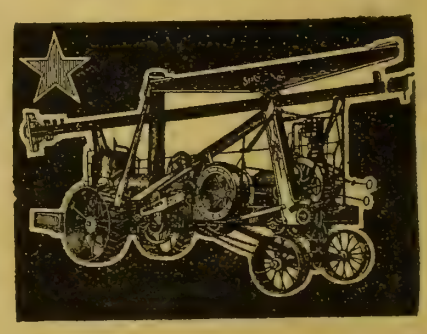

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We are clearly of the opinion that parcels post would do the mail order houses more damage than any other interest except the express companies, especially the liimted parcels post proposed by the postmaster general under the Roosevelt administration. By this it was proposed to distribute parcels at a very low rate through the rural carriers on the various routes emanating from a town.

This would enable farmers to order packages from the town merchant without the trouble of hitching up and going to town, at an expense probably less than the trouble of hitching up and the wear and tear on team and wagon. The mail order house could not possibly utilize this, and the result would be that the business of the farmer would be thrown directly to the nearest town or city from which his rural route issues. It might possibly change the method of doing business in the country towns, might eliminate some of the local merchants, which would be a good thing, for the reason that in many towns and cities there are more retailers than can make a decent living without charging exorbitant prices.

The cry will be made that it would swamp the rural carriers. There are forty thousand of these, and the official reports say that the average weight of mail delivered by each wagon in the rural delivery service is only twenty-five pounds. The carrier is prepared to take 500 pounds. Now if by this limited parcels post the rural routes earn two dollars for each round trip, the gain would be over $2,500,000; and to make this gain each carrier would only need to take twenty pounds additional, or a total load of forty-five pounds.

Rural parcels post—and we believe this should be tried out first on the plan proposed by Postmaster General von Meyer—would enlarge the scope of our present parcels post by raising the limit from four pounds to eleven, and greatly reduce the rate. It would strike down the monopoly which the express companies now have in transporting everything weighing more than four pounds; but mainly, it would induce the farmer to deal with his country merchant at a very greatly reduced cost.

The rural mail delivery and the rural telephone have been a wonderful advantage to the farmers of our land; and parcels post would be as great an advantage in many ways as either of these. It would not have been practicable until the rural route system was established and the telephone brought into use. It now follows logically as the third great addition to the comforts of the farm home.

It is time for the farmer to let his representatives in congress know that he wants them to do business on this matter without any more foolishness. —Rural New Yorker.

* * *

Here is a copy of the Sulzer bill, the passage of which will be pressed at the coming congress. Its passage means greatly reduced postal rates, and allows parcels up to eleven pounds. It also means other improvements in the postal service, and, we trust, the placing of the service on a more businesslike basis. The bill and the petition below are put in this form in the Cultivator that it may be cut out and pasted on the ordinary legal cap paper and used as a heading for a petition which we hope our subscribers will circulate and send to Washington. We believe the best method will be to send to the representative of the district in which the petition is circulated.

Postal Progress League Bill, H. R. 14

Introduced in 62nd Congress, April 4th, 1911, by Hon. William Sulzer of New York

A BILL—To Reduce Postal Rates, to Improve the Postal Service and to Increase Postal Revenues

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled. That the common weight limit of the domestic postal service of the United States is hereby increased to ELEVEN POUNDS, the common limit of the Universal Postal Union, and that in the general business of the post office the one-cent-an-ounce rate on general merchandise—fourth-class mail matetr—be, and is hereby, reduced to the third-class rate, one cent for each two ounces or fraction thereof.

Sec 2. That the rate on local letters or sealed parcels posted for delivery within the free-delivery service is hereby determined at two cents on parcels up to four ounces, one cent on each additional two ounces; at non-delivery offices, one cent for each two ounces.

FREE RURAL SERVICE.

Sec. 3. That all mail matter collected and delivered within the different rural routes of the United States is hereby determined to be in one class with rates, door to door, between the different houses and places of business and the post office or post offices on each route, as follows: On parcels up to one twenty-fourth of a cubic foot, or one by six by twelve inches in dimensions and up to one pound in weight, one cent; on larger parcels up to one-half a cubic foot, or six by twelve by twelve inches in dimensions and up to eleven pounds in weight, five cents; on larger parcels up to one cubic foot, six by twelve by twenty-four inches in dimensions and up to twenty-five pounds in weight, ten cents. No parcel shall be over six feet in length, and in no case shall a carrier be obliged to transport a load of over five hundred pounds.

INSURANCE.

Sec. 4. That on all unregistered prepaid mail matter without declared value an indemnity up to ten dollars shall be paid by the Post Office Department for such actual loss or damage as may occur through the fault of the postal service, and this without extra charge. Certificates of posting shall be provided on demand. On registered parcels of declared value, and on which the fee for registration, insurance, and postage has been duly prepaid, the Post Office Department shall pay the full value of any direct loss or damage that may occur through the fault of the postal service. The fees for insurance and registration shall be as follows: For registration and insurance up to fifty dollars, ten cents; for each additional fifty dollars, two cents. No claim for compensation will be admitted if not presented within one year after the parcel is posted.

Sec. 5. That all Acts and parts of Acts inconsistent with this Act are hereby repealed.

Sec. 6. That this Act shall take effect six months from and after the date of approval thereof.

(THE ENTERING WEDGE FOR A LOWER RATE AND A GREATER CARRYING CAPACITY.)

General Service—Weight Limit, 11 lbs. Rate, 8c per lb. Rural Service—Weight Limit 25 lbs.... Rate, 1 lb. 1c; 11 lbs. 5c; 25 lbs. 10c. Insurance to full value.

PARCELS POST PETITION

To the Hon. Senate and House of Representatives of the United States of America, assembled in the Sixty-Second Congress:

Gentlemen:—

We the undersigned, respectfully request the immediate enactment of the above bill or of a more progressive measure into law.

Date.....

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Rainbow Spencer—the new flaked crimson rose on ivory, sealed packet 25c.
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This is not a bargain, but an introductory offer to get you interested in Lilly's Seeds, and to prove to you their quality and reliability.

LILLY'S "DELICIOUS" LETTUCE. A variety introduced by us, very early with fine, hard, medium-sized heads, rich yellow heart, with a delicious buttery flavor.

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Small Fruits and Vegetables

THIS MONTH IN SOUTHERN CALIFORNIA.

By O. M. Morris.

This month is the season for general garden and is to be considered our only winter month—if one could call it so owing to the chilly nights. Most everything planted now grows slowly except in very favored localities. Under such conditions plantings are being made of all the hardier vegetables. Some kinds of these are planted with good results. Turnips and cabbage are quite hardy and can be planted now. We might also add carrots, beets, lettuce, peas, kale, Swiss chard, radish, leek, mustard, collards, onions and Brussels sprouts. Also if one wants early greens small plantings should be made every ten days or two weeks of China cabbage. This makes very early greens, but soon goes to seed. So it is necessary to plant along through the season—up till April. It will not do very well in the hot summer months. This also makes an excellent quick feed for chickens and during winter is probably better than Swiss chard, the latter being of slow growth during winter. Another good vegetable greens is pepper grass or cress. This does well during the cooler months, should be planted under same culture as radish or carrots. This is very common in Europe, but not much known here. They use it generally to mix with other greens to impart its tart spicy flavor. This mixed with spinach makes a splendid dish. Spinach is nearly always in season, especially during cooler months, and one should use the winter varieties now. They make quick growth and are ready in about sixty days from planting, and like China cabbage, should be planted at frequent intervals so as to keep a good young crop coming along as needed.

The Los Angeles market is well supplied with an extra fine quality of lettuce this season, also in most other lines of vegetables. The quantity is far superior to former years. This is owing to intelligence in selecting varieties that succeed in this climate for a particular season. Our vegetable growers are becoming educated fast along these lines, and consequently they are making good profit from their investment and labor. It would be very profitable for any one interested in these matters to visit our Los Angeles markets during the very early hours of the morning and see what great quantities of vegetables are handled and also interesting to see how they are disposed of. There is probably less than 15 per cent of the product sold retail by the peddlers that is raised by them, the growers bringing into the markets their big wagonloads, and selling to the peddlers what they need, and they in turn scatter out over the large area of the city and sell their supply to the housewife. There are many hundreds of these peddlers, and their hours of labor are long ones. They are at the market long before it is light and many do not get back home till late at night. This is one reason that the growers find it more profitable to sell wholesale and get back home early to look after their work.

The tree planting season is now close at hand. January 1st will start the season. Fruit trees are in big demand and supply is limited. Apricots are about cleaned up at this date under contract for future delivery. Apples are also finding ready sale under contract. Large orchards are to be planted, and these promise a short supply for later delivery, and prices will probably be a little stiffer than for several years. The many new sections of the country coming under cultivation are calling for a larger supply. Also as deciduous fruit tree planting has not kept up with the demand for the fruit of late years, the orange having held the interest of the horticulturalist. But the price of deciduous fruits for several years has been on the increase in the South and much planting is contemplated.

THIS MONTH IN NORTHERN CALIFORNIA.

By R. E. Shouse, Willows.

In Northern California I do not think December too late to begin a winter planting of all the hardy vegetables, such as turnips, beets, carrots, lettuce, parsnips, onions and radishes. To this list may be added, if the plants have been started, cabbage, cauliflower and celery, which can still be set out to good advantage.

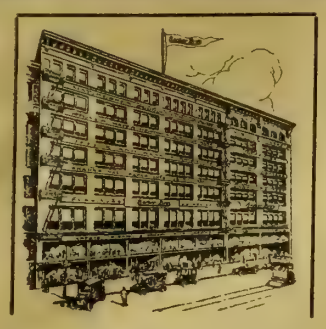
To prepare the soil for a winter garden, special pains should be taken to work in plenty of light stable manure. If possible, field peas, or vetch, should be grown and plowed under green. This will make the soil light and easy to cultivate. Be sure to provide also for thorough drainage. Cultivate the crops in the usual way. Keep the soil well drawn up around the celery. This will keep it white. Celery must not stand in water, as this would cause rust and it would not sell to advantage.

It is a little late now to plant green manure in your orchard. This should have been attended to about two or three weeks ago. Vetch is usually planted in the fall, in the latter part of October, and plowed under early in the spring. Then cow peas can be planted and plowed under in the fall. This is wonderful help in an orchard, either old or young. If no green manure has been turned under this fall it would be well to take stable manure and place it around the tree in a circle about ten feet in diameter and spade it as deep as is possible without disturbing the roots.

If any transplanting is to be done it could be done now. The hole where the tree is to stand should be made ready and the tree should be well cut back before being lifted out of the ground.

Later in the month, when the work is slack on the farm, you can start pruning. This is a very particular piece of work, but there are some who do not realize this fact. Pruning does not mean to cut off a few branches without knowing just why it is done. A pruner should be able, if asked, to tell his object in cutting off each branch, and what good it will do the tree. It would not be advisable to follow any set rule for pruning, as each tree may need attention of a different sort. Young trees, such as apples, cherries, plums, apricots, and peaches, should have the leader cut to about three-quarters of its height and the laterals should be cut back to three or four buds when the tree is planted. The second year the trees can stand a more severe pruning. Cut well back, but remember that you are starting the framework for a well-shaped tree.

Pruning of old orchards will be explained later.



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—There is nothing which perpetuates fond recollections more than a substantial gift, and no gift can be more substantial than a really worthy piece of furniture, no matter how small its cost may be. Any inquiry will have immediate attention, and all purchases will be shipped faithfully as directed. Now is the time to choose while assortments are at their best.

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Los Angeles
California

The Ornamental Garden

THIS MONTH IN NORTHERN CALIFORNIA.

By R. E. Shouse, Willows.

Early in December fruit growers in the Sacramento Valley should start pruning all deciduous shrubs and trees. The rose should be cut back so as to leave three or four buds of this year's growth and all dead branches, or cross branches, should be removed. Be careful to cut away any suckers that may appear below the graft. Transplanting deciduous trees and shrubs can be done at this time.

If specimen plants, or single plants that are to stand by themselves, are to be set out, dig a hole at least one foot more in diameter than the space occupied by the roots and about one foot deeper than the roots will extend when in the ground. When the soil is taken from the hole it should be thoroughly mixed with well-rotted stable manure. After the plant has been set in place the soil should be settled around the roots with water.

Trees and shrubs that are to be transplanted should be well-pruned back and all the dead wood should be carefully removed. The prunings can be made into cuttings and packed in damp sand until they start to grow. When this growth starts they should be transplanted to rows and later to the permanent bed.

This is just a little too early to begin to build hot beds; still, I think that if proper care is taken they can be started now with good results. Select a spot sheltered from the wind as the place to start your hot bed. Here you can start all your hardwood cuttings, your geraniums and tuberous rooted Begonias, and seed of almost every annual and perennial that can be planted. This hot bed should contain fresh manure to the depth of about 18 inches, with about 6 inches of sandy soil on top. The bed is simply a box and should be made of 2-inch material. The sash is usually 6 feet by 4. The top of the sand when the hot bed is finished should be about one foot below the level of the ground. Build the bed and put in the soil at least one week before you are ready to do the planting. This gives the soil a chance to become warm. Plant the seeds and cuttings in rows, and be very careful to keep an even temperature in the bed.

When the hardwood cuttings have started to grow they may be set out in rows in the field, thus making more room in the hotbed for more tender plants. The seeds when up about one-half, or three-quarters of an inch in the hotbed, should be thinned so that they will be about two inches apart. The geraniums and begonias when well rooted, should be transplanted into 3-inch pots. This will give you an early start for spring and summer flowers.

HISTORY OF A FLOWER.

Flower lovers may be interested to learn that a flower from the first chrysanthemum ever grown in England may still be seen in the herbarium of the British Museum. The plant, one of the small yellow-flowered variety, was introduced into the Chelsea botanic gardens in 1764, by the famous floriculturist Philip Miller, who himself preserved the specimen now in the museum. The new flower, however, failed to "catch on." Its culture was neglected, and it is only within recent years that it has attained its present enormous popularity. — Westminster Gazette.

THIS MONTH IN SOUTHERN CALIFORNIA.

By O. M. Morris.

This is the season that one should be making ready for the early garden. Sweet peas should now be planted, the earlier the better. Field-grown roses will be ready for planting out within the next two or three weeks, and for spring blooming the earlier they are planted the more flowers one can expect. The field-grown rose business has become of considerable importance to Southern California. We have a dozen or more firms that grow them in large quantities. Three firms estimate their supply away over one million plants, and they are shipped all over the United States. Large quantities are shipped to Oregon and Washington and car shipments have gone to the Middle West and even as far as New Jersey. One can get better rose plants in California than anywhere and there is no excuse for having the small greenhouse plants sent in by mail from the East that seldom give satisfaction. These California roses can be secured in your own town or from some nurseryman near by, and will give good satisfaction, or can be had from the leading seedsmen.

Many varieties of flower seed can be planted now: Phlox, mignonette, forget-me-nots, sweet alyssum, centaureas, candy tuft, cosmos, snapdragon, dianthus, gypsophila, Hunnemanias, poppies, hollyhocks, flax, lupins, pentsemons, stocks, pansies, etc. These are all hardy and easily grown. The sowing broadcast of California wild flowers, or even the California poppy in vacant lots, on hill sides and waste places, should be more encouraged, as they look much better than having such places bare, or grown up with weeds.

Early flowering asters should be planted now under a form or cover. They should be ready to bed out in March and would give bloom in May and June, following this planting a month later with Giants comet and American branching and have the flowers nearly all summer. There is no single flower that is so fine for cutting or for the flower garden as the aster in its many classes, and they are universally admired. The newer classes are almost as large and fine as large Chrysanthemums and are cheaper and more easily grown. Every one should try the Giant comet and Giant American branching, and we might mention here that California seedsmen grow the principal supply for this country, and this has been accomplished during the last few years. One firm shipped East over two tons of seed the past season. Formerly this seed mostly came from Germany. But times have changed and now we grow a finer flower than they ever produced and seed is of higher germination.

We all know the delight of going back to an old home, searching out the flowers we remembered—the roses by the walk, the iris under the crab apple trees, the bed of phlox; how good it seems to find them all there! Let us begin making memories for our children by putting out perennial plants and shrubs for them to come back to; the flowers mother used to raise are a more pleasant topic for conversation than the pies, cakes, etc., mother used to make. It is always with pride that a man says: "My mother was a great hand for flowers." Flowers indicate refinement.

BULBS

For fall and winter planting, also Flower Seed for fall sowing.

New catalog now ready, mailed free upon application.

Now is the Time to Sow

Payne's Royal Exhibition Pansy Seed
Giant Perfection Stocks and
Payne's Christmas Flowering Sweet Peas
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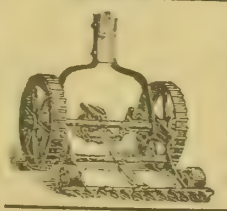

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There are three things that destroy your lawns Dandelions, Buck Plantain, and Crab Grass.

In one season the Clipper will drive them all out.

Clipper Lawn Mower Co
Dixon, Illinois

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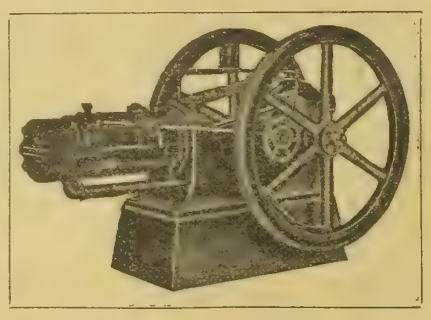

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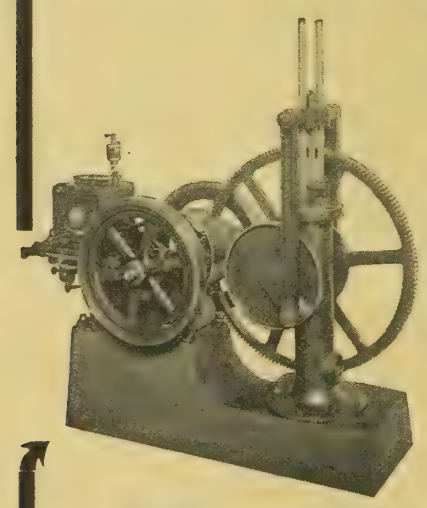

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If you have not, you have not seen the latest thing in a perfect little pumping plant. Note the simplicity of this jack; direct lift each side of the piston; no wobbling or jerking, but a smooth, even stroke. Engine is fitted with pulley, so that you can run the washing machine, the churn, the cream separator, and be such a handy little helper about the place.

We have them in 1 and 2 h.p., and don't forget that we carry a very large stock of engines and pumps of all sizes. Come and see us, or send for catalogue.

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Pump has Water Sealed Gland, Enclosed Balanced Impellor. Will not cut out by sand. Can be placed in a smaller pit than any other pump. Our Bulletin, C12, tells all about it. The pump can be seen in operation at our places of business. We have a permanent branch house at

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Irrigation and Forestry

IMPROVEMENTS IN NATIONAL PARKS.

The Department of the Interior proposes to spend $381,620 in the national parks in California during the fiscal year ending June 30, 1913, if the amount requested by the Secretary of the Interior is appropriated by Congress. This is an increase of $314,070 over the appropriation for the current fiscal year. The increases requested are as follows: Yosemite National Park, from $50,000 to $274,000; Sequoia National Park, from $15,550 to $89,550; General Grant National Park, from $2000 to $17,250. The items for each park are as follows:

Yosemite National Park: New road along south rim of Yosemite Valley from Fort Monroe to Glacier Point, $75,000; improving the road on the north side of Merced River from Pohono bridge to the junction with the Coulterville road, $50,210; continuing the improvement of the road on the south side of Merced River from Camp Ahwanee to Happy Isles, $46,750; a reinforced concrete bridge to replace the Sentinel bridge over Merced River, $14,000; construction of trail from Merced River, $5000; construction of trail from the head of Lyell Fork Meadows to the Lyell Glacier, $1500; continuing the installation of the water-distributing system in the Yosemite Valley, $25,000; garbage incinerator, $6900; operating the present road-sprinkling system, $7500; the extension of the road-sprinkling system to Fort Monroe and Happy Isles and operation of the same, $7500; repair of existing roads, trails, bridges, culverts, buildings, plants, fences, camp sanitation, and removal of undergrowth, $25,000; salaries, $10,460.

Sequoia National Park: Widening 21 miles of Giant Forest wagon road to 18 feet and constructing drain culvert, $25,200; constructing 40 miles of trail, $12,000; improving 150 miles of trail, $15,000; construction of 20 miles of telephone line, $8000; fencing 50 miles of the park boundary, $10,000; completion of water system for Tourist Camp at Camp Sierra, including public drinking fountains, $2500; constructing a stairway and handrail on Moro Rock, $2500; construction of pier, bathhouse, and boathouse at Twin Lakes, $2000; improvement and development of Paradise and Clough caves, $2000; piping water from Log Creek to Military Camp, $2000; repainting Marble Fork bridge, $250; fencing rangers' pasture and constructing and painting rangers' cabins, $2400; salaries of rangers, $5700.

General Grant National Park: Construction of two miles of wagon road, $5000; construction of 2 miles of trail, $400; completing water supply system at Tourist Camp, $500; fencing Tourist Camp ground, $800; rebuilding 8 miles of park boundary fence, $1600; construction and improvement of park buildings, $1050; forestation and protection of growing forest, $5000; construction of three gateways at entrances to park, $750; construction of public bathhouse, $750; salary of park ranger, $1400.

For the development and care of the national parks the Secretary of the Interior has asked Congress to appropriate the sum of $791,080.60, an increase of $617,830.61 over the appropriations for the current fiscal year. The national parks constitute ideal recreation grounds for thousands of people, but their development and use are seriously retarded by the lack of adequate roads and trails, and until sufficient money is appropriated for beginning a comprehensive plan of development the parks will fall far short of rendering the important public use for which they are intended. The general public interest in these pleasure grounds is shown by the fact that in a list recently issued by the Department of the Interior 390 magazine articles on the parks are enumerated. It is the intention of the department to make the principal places of interest in the parks accessible, to render traveling more comfortable by sprinkling the roads throughout the dry season, and to guard the health of the traveler by the installation of proper water supply and sewerage systems. The responsibility for the future conduct of the national parks must rest with congress, but the department feels that the financial needs of these reservations should be clearly presented to congress in the annual estimates.

THE COLORADO RIVER BASIN.

There is no more interesting river in the world than the Colorado. Industrially, scenically and geologically it presents more diverse conditions than any other stream in the United States. From the crest of the Rocky Mountains in Colorado and Wyoming it sweeps across the intervening country, traversing parts of Utah, New Mexico, Arizona and Nevada, to the head of the Gulf of California, the area drained being about 300,000 square miles. In the Rocky Mountain region it flows through a country covered by eternal snows and waters, some of the most fertile and valuable agricultural lands in the world, in Western Colorado, Northwestern New Mexico and Eastern Utah. It traverses the famous Grand Canyon of the Colorado in the northern part of Arizona, and finally passes over the broad, flat plains above the head of the Gulf of California. In this lowermost portion the river strongly resembles the Nile, having annual floods which distribute silt over the adjoining lands and render them as fertile as those in the historic valley of North Africa. The Colorado and its tributaries have other values than that of irrigation, for, descending in steep channels, they present abundant opportunities for the development of water power. Power has been developed at a few points, but the resources of the Colorado basin are in this respect yet practically untouched.

Prevent Disastrous Inundations.

In a basin so liberally provided with natural resources it is a fundamental necessity, in planning for the utilization of the river, to ascertain the amount of water available in the main stream and its principal tributaries, so that future developments, as well as those now under construction, can be suitably designed in type and capacity. For a long period of years the United States Geological Survey has been making observations and measurements at many important points in the Colorado basin, and the latest published information on the subject is contained in Water Supply Paper 269 of the Survey, which is a progress report of river flow measurements in this basin for the year 1909. In this report are recorded observations at

179 stations, covering Grand River and tributaries in Utah, Colorado and Wyoming, the San Juan basin in Northwestern New Mexico, the Little Colorado River basin in Colorado, the Gila River basin in Arizona, and finally the discharge near the mouth of the main stream at Yuma, Arizona. These records are not only of local value for guiding economic development, but they have an international significance in connection with the difficulties that have been encountered in the control of the Colorado near its mouth in Mexican territory. The escape of the river from its regular channel and its diversion in the Salton Sea are matters of recent history, and the consequences of a diversion of this kind, which promised to inundate some of the most fertile country in Southern California, have been discussed in the public press.

Controlling the River.

The control of the Colorado for the prevention of further outbreaks must involve thorough knwledge of the tributary flow, even in the high regions of its headwaters in Colorado, and the ultimate steps taken to prevent disastrous inundation will in all probability involve the control of these upland tributaries.

The size of the Colorado River is indicated by its total discharge in the year 1909, which was 26,000,000 acre feet, or enough water to cover that number of acres to a depth of one foot. Such an amount of water, if poured upon Manhatton Borough of the City of New York and confined by retaining walls, would bury the city 1,857 feet deep, or it would make a lake 66 feet deep over the state of Delaware.

A copy of Water Supply Paper 269 may be obtained on application to the Director of the Geological Survey, at Washington, D. C.

YELLOW PINE.

The Department of Agriculture will soon issue Forest Service Bulletin 101, on "Western Yellow Pine in Arizona and New Mexico." The bulletin goes into the history of this tree, showing its progress, its faults and virtues, how best to protect it against fire and other enemies, how to conserve its growth, and its commercial value.

Answering the question would it pay to practice forestry of yellow pines affirmatively, the bulletin adds: "Just how much it will pay will depend, of course, upon the conditions under which each individual operates. The lumbermans' chief loss is undoubtedly through fire. Therefore, it will pay him to protect his timber from fire, and to use reasonable precautions in his logging operations. To burn oil in his engines and to see that his steam skidders and donkey engines are provided with spark arresters may be the means of preventing great losses. Close utilization is wise from a financial standpoint, and dead timber is now being profitably used by one of the largest manufacturers in Arizona."

"Western yellow pine," the bulletin concludes, "does not reach the development attained on the Pacific Coast, yet it is a tree admirably adapted to the semiarid conditions of the region, and is capable of yielding excellent saw timber. It withstands disease well, and except in early life is not susceptible to fire, drought, frosts or snow. From 160 to 200 years are usually necessary to produce a sawlog. The better grades of lumber are excellent for finish. Lumbering in the Southwest is expensive chiefly on account of the high price of labor. The higher grades of timber are easily disposed of, but the lower ones are difficult to market. Nevertheless, the timber in the national forests in the Southwest offers excellent opportunities for investment."

SNOWFALL.

"During the last two years the Weather Bureau has made systematic measurements of the amount of snowfall in the mountain regions of the West for the purpose of determining as accurately as possible the amount of water available for agricultural and commercial interests during the ensuing spring and summer seasons." The above statement was made by Secretary of Agriculture Wilson.

Continuing, the Secretary said: "In connection with the study of snowfall and its consequent run off, a systematic snow survey was begun in the watershed of Maple Creek, near Springville, Utah. While the work was of an experimental nature, it is thought that within two years sufficient observations will have been obtained to permit of accurate forecasts of water supply from the winter snowfall. The system can also be extended to other and larger projects, and the work will be limited only by the amount of funds available for the purpose. The report on the preliminary campaign in the Maple Creek watershed has brought many expressions of commendation from farmers and hydraulic engineers."

THE WORLD'S OUTPUT.

The United States Department of Agriculture has received the following cablegram, dated November 18, 1911, from the International Institute of Agriculture, Rome, Italy, regarding areas and production, this year, of the crops specified in the principal producing countries of the northern hemisphere, and the conditions attending the sowing and germination of winter cereal crops in the northern hemisphere.

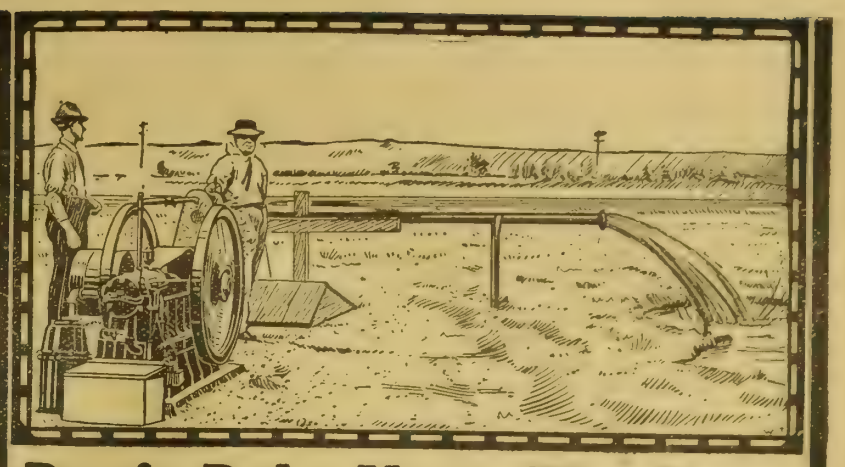
"All Wheat: Single numerical statemen of production 100.2 per cent of last year's production, indicating a total production of 1,637,000,000 cwt., or 3,055,733,000 bushels of 60 pounds.

"All Rye: 93.0 per cent of last year's production, indicating a total production of 662,000,000 cwt., or 1,324,000,000 bushels of 56 pounds.

"Barley: 99.4 per cent of last year's production, indicating a total production of 518,000,000 cwt., or 1,208,667,000 bushels of 48 pounds.

"Oats: 90.8 per cent of last year's production, indicating a total production of 967,000,000 cwt., or 3,384,500,000 bushels of 32 pounds.

"Winter Cereal Crops: The sowing is approaching completion; the work preparatory to sowing, and the sowing, was accomplished under good conditions, and germination is regular."



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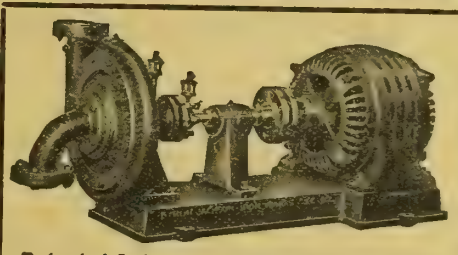

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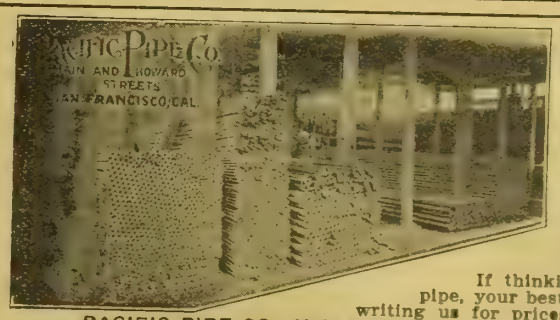

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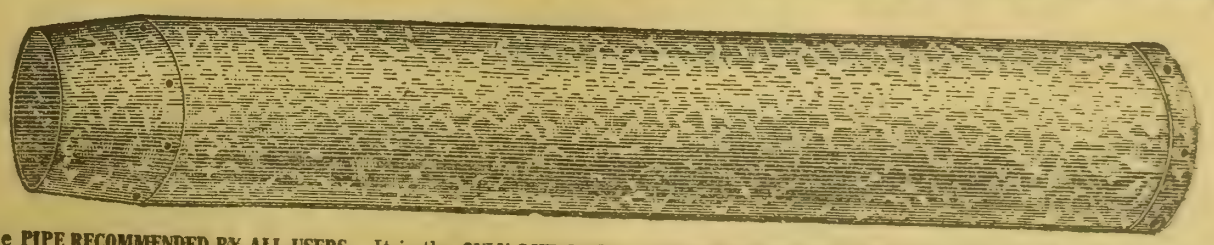

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VALUABLE WHEATS

Professor Shaw is sending out circular No. 71, "Grains Recommended for Trial." It refers to wheats which the Experiment Station has been testing out for several years. These new grains have not all as yet been pedigreed, but many of them are being disseminated in hundred-pound lots from the University Farm at Davis.

PEACH BORER

"The California Peach Borer" is the title of Bulletin No. 97 issued by the Bureau of Entomology, Department of Agricluture, and is written by Mr. Dudley Moulton, San Jose. It treats of the food plants liked best by this pest and descriptions and seasonal history, its natural enemies and methods of control.

AMERICAN BREEDERS

The eighth annual meeting of the American Breeders Association will be held in Washington, D. C., December 28, 29, 30. Mr. W. M. Hayes, Assistant Secretary of Agriculture, is secretary of this organization, and some of the brightest minds in the United States who have studied the question of plant and animal breeding will participate in the discussions.

ANGORA VENISON

The Angora Goat Breeders are planning a grand feed for January 4th, when a venison banquet is scheduled at the state meeting of the Oregon Angora Breeders. Proof is to be made that "Angora Venison" is one of the most palatable and is a poor man's relief in these days of high prices. At the Angora Show to be held at the same time, $1200 will be distributed in premiums.

MORE CO-OPERATION

We are glad indeed to see the deciduous fruit growers of the North get in line with the new Deciduous Fruit Growers League. This league will handle the larger problems of fruit marketing, such as transportation, tariff, credits and some other factors. J. W. Jeffery, former Horticultural Commissioner, is in charge. Mr. Jeffery has been a consistent believer in co-operation all his life and we believe will make a success of this league.

COUNTRY LIFE COMMITTEE

The California Country Life Committee has issued invitation for delegates to a Country Life Conference, to be held in joint session with the California Teachers' Conference, Bay section. The meeting will be at Stockton, Dec. 28-29. The special topic discussed will be "Rural Schools and Conservation." The basis of representation by delegates will be practically the same as at the October conference held at Davis. The number of teachers attending the conference may aggregate two or three thousand. At least there are three thousand members and it is estimated that the greater number will be present.

BUYING ABROAD

The United States sends to foreign countries one hundred million dollars worth of agricultural implements, and imports about fifty million dollars worth of foreign products which are used on American farms. In the latter are seeds, fertilizers, and of course a few farm implements, though in the line of manufactures the U. S. importation is very light.

Amongst the exports, twenty million dollars is for mowers and reapers, eight million for plows and cultivators and two and one-half million for threshers. The remainder is for miscellaneous tools and implements. Of her imports eighteen million dollars is for potash, guano and manure salts and seventeen million for nitrate of soda. Animals for breeding purposes, chiefly horses, are imported to the extent of three million dollars and for clover seed we send another three million, and for sugar beet seed nearly another million.

PARCELS POST

On another page will be seen a head for a petition which our subscriber may well take an interest in and use, to the end that we may secure a more business-like management of the postal department. Some Congressmen have felt that the department could be placed upon a self-sustaining basis by restricting its business. Usually business houses take the opposite view and meet increased expenses by inducing increased business. Surely no business house could continue as does the postal department, with a deficit every year. Of course it is claimed by the express companies that parcels post will result in still greater deficit in the department. It may under political methods, but if business methods are adopted there is no reason why the postal department of the United States should not be a profit bringer instead of a hard loser. Sign the petition and get your neighbor to do the same, and send it to your member of Congress.

BURBANK IN THE CABINET

We have a communication from a newspaper correspondent of Maryland in which he urges the fitness of Luther Burbank for the position of Secretary of Agriculture. Regardless of Mr. Burbank's fitness for this particular responsibility, he is worth too much to the horticultural world in the position he now occupies and in his wonderful talent for the creation of new forms of plant life to be taken away from that work which may bless mankind for all time to come. The same correspondent says: "Mr. Burbank believes with me that the public schools are not what they should be." Perhaps this is true, for doubtless the schools have not reached the stage of perfection, neither will they in the near future, but when he charges that public school education "does make boys idlers, discontents and criminals," we are sure he is not within the bounds of the truth and equally sure that Mr. Burbank does not agree with him in any sense.

Sure it is we want a change in the cabinet. Mr. Wilson has served well and long. He has not "outstayed his welcome," but plainly the people the country over are getting ready to extend to him a hearty welcome to private life.

WILSONIZING

We note that many of the circular letters of information sent to the press from the office of the Department of Agriculture at Washington state that "Secretary Wilson says," "Secretary Wilson thinks," "Secretary Wilson does" certain things. This is comparatively new. The Department of Agriculture represents the greatest productive industry in this country and the people who follow it, and the accomplishments of the Department are watched with great interest, resulting in much profit to the country and to the producers. It is right that it should have the credit for the great services its faithful workers are rendering, but while effort to give undue credit to the one whose name happens to head the list may be a source of satisfaction to that individual, we do not think it tends to encourage more efficient work on the part of those who are responsible for the accomplishments of the department.

Secretary Wilson has given long and faithful service to the Department. All credit is due him for much effective work, but, frankly, we do not like the new method of everlastingly Wilsonizing the information sent out.

CARELESS WORK

The Oregon Agricultural College is taking exception to certain reports of lectures delivered before the Portland Y. M. C. A. That organization is progressive, and one of its aids to young men desiring the latest along agricultural or fruit growing instruction has been the securing of lecturers who have appeared before the young men and given much valuable information. This was deemed too valuable to be wasted, so the Y. M. C. A. had short-hand reports made and later the lectures published in booklet form. The editing of these reports was placed in the hands of some one apparently uninformed on agricultural subjects and so garbled as to be worse than useless, for many wrong impressions are conveyed. The professors quoted are rebelling and in a statement which they have sent out some sentences in the book are quoted to show its hopeless inaccuracy. On one page of the booklet are seven serious errors. The statement is printed: "We find the soil of the Umatilla Valley will grow better pears than any other soil." This the lecturer "quoted" asserts he never said, for the soil of the Umatilla Valley has never yet been tested for pears and the impression is that it is not adapted to their culture. "Silt and sandy loam along the rivers," becomes in the hands of the reporter, "Silver sands lean along the river." Such a publication should be recalled.

SOIL TESTING

We have a letter from Dr. Cyril G. Hopkins of the University of Illinois, in which he refers to a soil testing outfit being advertised from a small Ohio town. The outfit is offered at ten dollars, one of its features being "The Story of the Soil," written by Dr. Hopkins, supposedly as an added inducement to the purchaser.

Regarding the outfit Dr. Hopkins writes: "I wish to say that I knew nothing of the Foote Farm Laboratories until we began to receive inquiries from their advertisements. We at once ordered an outfit, including all instructions, and have thoroughly investigated the outfit and the methods by which the Foote Farm Laboratories claim any farmer can analyze his soil,—the following quotation being a sample of their advertising:

"'The Foote Soil Testing Outfit is a complete, practical farm equipment with which you can readily tell what plant food each one of your fields needs and what they already have. It tells you just what food elements are in your soil and what is lacking.'

"A thorough investigation of this outfit reveals the fact that it is absolutely worthless. The so-called directions for testing soil not only give no valuable information, but they are absurd and senseless. The farmer who pays $10 for the outfit and attempts to use it will have thrown away both his time and money. I make this statement because my name is being used in a way to mislead."

Agricultural News Notes of the Pacific Coast

Northern California

Eldorado County is shipping winter pears to England.

It has been decided to install a new creamery at McArthur, Shasta County.

Olives of Butte County are two weeks later in ripening than last year.

A hail storm visited Butte County last week and did some injury to maturing olives.

Thousands of turkeys are being shipped from Vina, Tehama County, for the holiday trade.

Work will begin in a few days on a big reclamation project near Suisun, mostly marsh land.

Several carload exhibits of oranges are displayed at the Oroville Citrus Show now being held.

The creamery at Susanville, Lassen County, has been closed again owing to the scarcity of cream.

Fruit growers of Sutter County are busy with their pruning. The present outlook indicates a big crop.

Twelve thousand acres of sheep pasture in Shasta County is to be brought under irrigation and subdivided.

The Citrus Exposition at Oroville is showing the largest display of olive products ever made in the state.

Hundreds of head of cattle are being driven down from the mountains of Shasta County to winter pasturage.

A broom corn grower at Corning, Tehama County, recently shipped two cars which he grew during the past season.

In spite of the dry fall, growers about Vacaville report fruit buds well advanced and in unusually healthy condition.

One buyer of broom corn in the northern end of the state has asserted that he could handle 500 cars if it could be produced.

A ton of dynamite to be used for digging irrigation and drainage ditches, has been ordered by the Sacramento Valley Irrigation Company on its big project in Colusa and Glenn Counties.

A new forage and pasture grass will be tried out this season by the agricultural department of the Sacramento Valley Irrigation Company. This is chicory, which is in extensive use by the farmers of England and Scotland.

It is reported that Philadelphia tobacco dealers have offered four cents a pound to Chico growers for peach culls to be used in flavoring tobacco. Eleven tons of culls were recently shipped for this purpose.

A delegation of bean bag manufacturers has protested to Governor Johnson against bean bags being manufactured at San Quentin. Only recently by request of the bean growers, Gov. Johnson gave the order for the manufacture of the bags.

Belgian horse owners of Walnut Creek, Contra Costa County, have formed an association to promote breeding of good draft horses. A. P. Borges of Moraga Valley has been elected president, and Armand Stow of Walnut Creek, secretary.

The boosters of Butte County are indignant because of a claimed discrimination by the demonstration train service in favor of the western side of the Valley. It is asserted that the exhibit of soil samples on the train did not do justice to the eastern side.

Central California

Mulefoot hogs is the newest introduction to Turlock, Stanislaus County.

The olive crop around Lindsay, Tulare County, is exceptionally good this year.

Tulare County has increased its olive acreage during the past season by some 400 acres.

Commissioner Schulz of Tulare County finds that red spider is infesting the shade trees.

An effort is on foot in Kings and Tulare Counties to form a bi-county association of dairymen.

Sixteen hundred tons of grapes were shipped from Ceres, Stanislaus County, during the month of October.

San Joaquin County wineries found themselves over-supplied with grapes and cut the price on later pickings from $8 to $6.

Merced County is threatened with law suit because of its veterinarian having killed a glandered horse without consent of the owner.

The fruit growers of Clovis, Fresno County, met last week to perfect an organization for better cooperation in handling and marketing their crops.

A mixed car of tangerines, lemons and oranges was recently shipped from Porterville to England for the holiday trade. A similar mixed car was sent to Honolulu.

A strong movement has been started at Dinuba, Tulare County, to make the California Farmers Union the central selling and marketing agency for this year's raisin crop.

Indications are that the celery crop of the San Joaquin delta lands will this year surpass all records. The biggest crops will be gathered from Andus and Sherman Islands.

At a recent meeting of the State Realty Federation held in Fresno war was declared on real estate fakers in an effort to put a halt to swindling schemes to which Easterners have been subjected.

A cotton grower recently from Texas has raised a satisfactory experimental tract of long staple cotton on land south of Porterville, and thinks cotton will do especially well on what are known as the lime lands.

Commissioner Schulz of Tulare County reports that while there is no scale infestation in any of the commercial orchards of the county, that black and yellow scale has been found on dooryard trees in Visalia.

A. G. Schulz, County Horticultural Commissioner of Tulare County, reports about 60 per cent of the navel crop in market for the Thanksgiving trade, the remainder to be shipped by the 10th of December for the Christmas market.

Residents of Inyo and Mono Counties are greatly interested in the movement for conservation of fish and game. El Camino Fish and Game Protective Association has been organized and is affiliated with similar organizations in different parts of the state.

A fifteen hundred mile thoroughfare is the conception of the Inyo Good Roads Club for a Panama Pacific feature. The plan is to put in shape an automobile road from San Francisco along the coast to Los Angeles, north along the Sierra Nevada to Lake Tahoe, from there via Sacramento to San Francisco.

Southern California

Southern California produces annually over 700,000 tons of sugar beets.

Demand for dried apricots is decidedly slack and growers are wondering.

Long Beach Poultry Assoiciation holds its annual meeting next week.

A Coachella Valley cotton grower has obtained 37 per cent lint in his cotton.

Imperial Valley is receiving about a hundred thousand dollars a month from its creameries.

The Anaheim sugar factory is still running on hold-over syrup, but will soon close down for the season.

Eucalyptus Day is proposed for Oxnard, Ventura County, to celebrate the opening of its new eucalyptus mill.

The Citrus Protective League composed of orange growers about Rialto was formed to protect groves from constant loss by thieving.

Coachella Valley is laying plans for its big fair this month. It is expected that the Southern Pacific will give special rates into the Valley.

The cotton gin at Calexico, Imperial County, was recently destroyed by fire. This will compel Calexico farmers to make the long haul to the El Centro gin.

A dredger is at work in the upper portion of the Newbert protection district, piling up sand on the river bank to hold in the flood waters of the Santa Ana.

National City, San Diego County, has a record of 482 carloads of citrus fruit shipped last year through one company. The bulk of the shipment was lemons.

Anaheim Orange Growers Association has just completed one of the largest packing houses in this region. It began handling navels on the 1st of the month.

During the Creamery Operators convention at San Luis Obispo last week dairy cows entered into a producing contest and butter makers participated in a scoring contest.

Some 800 acres has been signed up for planting of sugar beets by ranchers in the San Luis Rey Valley. A spur from the Santa Fe tracks will probably be built into the valley.

A San Bernardino man has crossed mountain sheep with his Leicester flock, developing a new type combining fine texture of wool of the Leicester with the greater size of the native breed.

The coming National Orange Show at San Bernardino will require double the show room used last year. The great tent used at the Watsonville Apple Show will be brought down to accommodate the exhibits.

Forest Supervisor Charlton recently visited the San Bernardino mountains and will soon have his foresters at work planting some 40,000 pine trees on the sides of the mountains which were burned off a few months ago.

The Cucamonga Citrus Fruit Growers Association at its last annual meeting elected the following directors: Chas. Motsinger, F. B. Van Fleet, A. J. Worthington, H. Albert, L. M. Ledig, O. W. Freeman and J. A. Hall. D. L. Barnes, the efficient manager, has been retained for another year.

The Coast

Spokane swine breeders are having trouble with hog cholera.

An apple show is being pulled off at Medford, Ore., this week.

The earliest snow on record at Medford, Ore., fell on Nov. 11th.

Yakima Valley sheep owners are moving their flocks onto the lower ranges of the valley.

The Douglas County, Oregon, Poultry Show Association is planning for a big show Dec. 27-30.

Another irrigation project has been launched in Eastern Oregon to cover ten thousand acres of land.

A Montana cattle man reports the price of $7.90 a hundred for range cattle, the highest ever paid.

A large representation of Seattle and Portland people attended the Spokane Apple Show last week.

During the last year fifty-one new granges were organized in Washington, and forty-six in Oregon.

The Washington County, Oregon, Cow Testing Association has voted to test cows every month next season.

School children of Salem, Ore., recently made an exhibit of agriculture at the Country Life Congress at Spokane, Wash.

Clarkston, Wash., is preparing to entertain 400 delegates to the coming meeting of the State Horticultural Convention.

The State Forestry Board of Oregon is planning extensive tree planting in the dry counties of the eastern part of the state.

Horticulturists of Clarkston, Wash., have declared war on the San Jose scale. They intend to manufacture their own spray.

Cold weather and snow the last week has stopped all farm work in the Inland Empire. Most of the crops were out of the way.

Unsettled weather in Eastern Washington caught some farmers unprepared, but many have winter wheat well up and in good condition.

A storage dam near Ellensburg, Wash., was threatened by storms last week, but finally was saved by releasing the stored water behind it.

Prominent members of the granges near Spokane met last week and discussed matters pertaining to the grange of Eastern Washington.

A swine disease thought to be hog cholera broke out in the herds near Newport, Wash. The State Veterinarian declared the trouble to be pneumonia.

Two members of the faculty of the Agricultural College of Nevada University are making a scientific study of the soil in Los Vegas Valley to determine its agricultural possibilities.

The fourteenth annual convention of Oregon wool growers recently convened at Baker and elected the following officers for the ensuing year: President, Jay Dobbin; vice president, E. P. Cranston, Baker; secretary-treasurer, John Hake, Baker.

Nearly a hundred thousand acres of swamp land in Northern Idaho and British Columbia are proposed to be drained by lowering the Kootenai Straits, thirty-five miles north of the international boundary. The land is suitable for grain raising.

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CLEANLINESS.

We are apt to think that cleanliness in the dairy means only having the milkers in white suits, cows with washed udders in a clean, white lined building with good cement floors. It should mean much more than this. It should mean that neither food nor water is offered to the cow that one would not consider clean enough for his own consumption. It is understood that the cow's taste in food is to be consulted, not ours, for a porterhouse steak or oysters on toast would be as surely rejected by her as distasteful as we would reject a breakfast of corn silage a la wheat straw. Yet both of these meals can be equally clean. The mangers can be as clean as the plates. The man who keeps a few cows without making special arrangements for their care is the one that is apt to do careless work. This shiftlessness must end if the smaller dairies are not to be suppressed. The health officers are worrying the slovenly men all over the United States. The money paid out for fines might as well be put out as improvements. The time has passed when the producer can afford to be independent of the opinions and wishes of the consumer.

Water.

One of the things today that is the worst feature of the small dairy is the water supply. The cows rarely receive clean water in clean troughs. The fact that water is the largest constituent of milk is overlooked. Eighty-seven per cent of milk is merely water. In this water the casein, milk sugar and ash are mingled and the butter globules float. Now, if a cow's milk is so largely water, think what a "great thirst" she must have at all times. It is necessary for a cow giving eight gallons of milk a day to drink that eight gallons and as much more as she requires to make up the watery portion of her blood. A herd of cows suffering from a lack of water shrinks rapidly in milk. Poor water, diseased or filthy water makes the cow's stomach a strainer to remove the disease and filth before it passes into the pail. We trust there are no leaks in the internal strainer of the cow.

Disease.

The watering troughs are most perfect when made of cement with a wide flare at the top. Capacity is gained by length rather than by adding to the depth. In hot weather a roof of palm leaves supported by poles will shade the troughs and prevent the formation of long, slimy strings of green in the water. We like the shallow troughs, as they hold a smaller quantity of water and the waste is not great in cleaning. Where the water is pumped either by engine or by hand it requires courage to turn a large amount out on the ground. It also makes an ugly wet hole at the watering place when this is done daily. The watering trough should be swept out with a stiff broom, pushing it into the corners. Where wooden troughs are used they can be kept sweet by frequently whitewashing the inside. The lime prevents the forming of green slime, and the little that is dissolved acts as a purifier.

Swales.

It pays to fence the cows out of the stagnant water of swales. It is not good for their udders to be wet with foul water. Cows often pass garget and cow pox around in this way. We had trouble with the cows' udders at one time, and found out that when the swales were emptied by the falling of the water in Fancher Creek the trouble passed away. We fenced the swales up when we discovered they were filthy with manure. The cows having udder trouble from standing in this water may be giving diseases to people that we do not understand at present. The cows tracking in and out of a ditch to drink soon make a filthy muddy place that should not be tolerated on a clean man's ranch. The cows smear themselves with manure and mud, and when the udders and flanks are not carefully washed the milk is fouled. It seems that manure in the milk is not only mighty unpleasant to think about but may be deadly in effect. Scientific men tell us that the tuberculosis bacilli or germs found in milk get there frequently from the manure. The manure is often alive with them, while fewer are given off in the milk directly from the udder.

Bad Taste.

The cows are fond of drinking muddy, sun-warmed pools, and will leave the clearer running water to seek the swales. I presume it is like people eating overripe meats and birds. There is a company famous for its meals that boasts that no meats are used under five weeks old. They are not put into cold storage, but ripened at an even temperature. In birds such as plover and grouse the old rule was to hang them up until they dropped to the floor by ripeness before cooking. Cows like to drink the high flavored water, and must be controlled by fencing them out of these spots. A running stream may be used if it is certain that no filth is allowed to enter it higher up. Make a firm road for the cows to enter the stream. I am rather afraid of running water, as the people have a way of throwing dead animals into water. Anthrax breaks out along streams, and is thought to be carried by dead carcasses floating down stream. The water for the cows and stock should be pumped from wells if entire safety and cleanliness are desired. We have done this for years, and do not find it expensive. A good well 109 feet deep into pure water was driven, and then a smaller casing put down inside. Cement was worked down between the casings, and the water supply was permanently good.

Typhoid Fever.

Water is the carrier of typhoid fever, and the dairy cow furnishes the milk that is placed in cans washed in water infected with this bacillus. Now, milk is good for baby germs as well as for other babies. They grow and multiply with great rapidity, and in a few weeks the city or town using the milk has an epidemic of the disease. Dysentery, scarlet fever and cholera are all carried by water at times. The dirty watering place and the illy kept water are all disease producers in the cow, and may be for the master. Now, this winter while the

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ground is soft use the scraper to fill the swale holes and low wet spots. If these are too large to fill, then fence them up with wire fencing. Use willow posts, as these grow into trees for firewood quickly. When there are deep sinkholes the trees may line the banks, and the holes themselves be used as catchalls for the tin cans and other rubbish that piles up on the ranch. In a few years many will be filled up completely by simply dumping the clean trash into them.—M. E. Sherman.

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Stands with feet flat on ground, limbs placed evenly side by side, with equal bearing and weight on each. The horse occasionally "stands at ease" by resting the hind limbs alternately—the joints are partly flexed, the fetlock is knuckled, the heel raised, and the toe rests lightly on the ground. The fore limbs are never so rested in health.

Rests at night and during the day, when undisturbed, by lying down with the knees and hocks flexed, and the body inclining slightly to one side. Rises by raising the forequarters first, then gathers the hind limbs under the body, and springs to the upright position.

Gait.

Even and rhythmical movement of limbs, and even distribution of weight.

Appetite When Stabled.

Eager desire for food—as distinguished from greediness or laconic picking—at regular feeding times. Desire for variant foods such as carrots, green stuff, grass and the like. Refusal of mouldy or coarse food, also bones, lime, sand, earth and rubbish. Slow, rhythmic grinding of the bolus of food.

In Pasture.

Almost continuously grazing and moving, except when attention arrested or when engaged in play or seeking shade from sun or shelter from wind or rain. Healthy working horses usually roll when just turned out; whinnying at familiar sounds, or when alarmed, is indulged in at intervals.

Coat.

Sleek, flat, glossy and even (no harness marks) when groomed; greasy to the touch when not.

Skin.

Supple and loose to handle; clean and free from scurf when groomed; scurfy when ungroomed. Pigmented (black) in most horses. Equable warmth and sensibility to touch all over.

Ears.

Mobile, alert, and evenly pricked.

Eyes.

Eyeball bright and glistening, without excess of moisture or tears; sensitive to touch or approach of finger. Pupil transparent, in shape oval or oblong, with rounded ends; sensitive to light, contracting in a bright light and dilating in darkness. White of eye (sclerotic coat) clear, even white; not bloodshot or tinged with yellow or other color. Haw of the eye and conjunctiva (lining of eyelids) carnation red, and moist. Eyelids mobile and sensitive.

Lips.

Mobile, dry, smooth, velvety, and sensitive to the touch.

Nostrils.

Dry, except for an occasional drop of moisture below the tear duct.

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Mobile, moist, and free from furriness.

Visible mucus membranes (linings of nostrils, eyelids and vulva), carnation red in color, and moist.

Hoofs.

Shape approaching the circular on the ground surface; the hind hoofs are somewhat more oval. The natural angle at which the front of the hoof meets the ground at the toe is about 50 degrees in the fore feet and 55 degrees in the hind feet, the latter being more upright and having usually higher heels. Wall.—The surface of the wall should be even, smooth and polished, free from cracks, rings or unevenness of growth. Heels broad and open. Bars strong and thick, to afford bearing surface for heel of shoe. Frog broad, full and springy, free from moisture and foetid smell; should show signs of wear by contact with ground. Sole dry and flakey; free from moisture; absence of softness and powdering texture. The hoof horn should be tough and yielding, not rigid, brittle or "shelly." The off and near hoofs should be uniform in size and shape.

Defecation.

Moderate frequency of bowel movements—the average being ten or twelve times in twenty-four hours—unaccompanied by foetid flatus and without unpleasant smell.

Faeces (dung).

Quantity.—From twenty-five to thirty-five pounds during the twenty-four hours, a greater bulk being passed during the night than the daytime. Appearance.—Moderately dry and balled, with moderately firm coherence of particles, but without gluey consistence or coating; free from whole grain or only partially disintegrated food particles; color corresponding with character of food. (Balled faeces of normal cohesion float in water.)

Urination.

Desire to "stale" on returning to the stable or on being bedded down.

Urine.

Quantity varies according to diet and activities, being less in horses at work; average about nine pints per day, passed at three or four stalings. Appearance.—Yellowish-red or straw color, and turbid, without excess of sediment, blood tinge, sliminess or foetid odor. The urine of mares in season has an oily consistency.

Temperature.

Internal, 100 to 101 degrees. External, moderate and even warmth of body surface; warmth of ears, extremities (pasterns and cannons) and hoofs uniform.

Pulse.

From thirty-five to forty-five beats per minute.

Breathing.

From twelve to fifteen respirations per minute. Even rhythmical rise and fall of ribs and flank; absence of tifting cough or other noise, and of double flang heave on sharp exercise.—American Cultivator.

Veterinary

Answers in this column by Fred G. Matthews, M. S., D. V. M., 1223 Central Ave., Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Thrush—Itch.

What is good for thrush in horses' feet? Can it be cured? Is there a cure for the itch? This horse was in this condition when I bought so I do not know how long he has been that way.—Subscriber, El Centro.

The danger from thrush alone is trifling, as it is readily cured by simple remedies. However, when thrush is a sequel to deeper-seated inflammation, it will recur when cured, while the cause exists. Do not mistake thrush for canker. In thrush the frog is undermined by black pus; in canker a soft, white growth appears which does not yield to treatment. Have your blacksmith pare away all ragged edges of the frog and follow each pocket of pus to its bottom. Then swab the parts with pure turpentine and work dry calomel into all cavities. For itch use coal tar disinfectant one part, neatsfoot oil three parts; shake and apply to itching surface every third day.—F. G. M.

Tail Rubbing.

A horse seven years old is always rubbing his tail and biting himself on the sides. Otherwise he is healthy.—Subscriber, Lincoln.

Tail rubbing is sometimes caused by parasites lodged within the rectum. The grub of the red-tailed bot fly (Estrus hemon rhoidalis) hook themselves to the lining of the rectum and two kinds of round worms are known to infest this part. Externally the skin of the tail may be irritated by mange parasites, mites, or eczema. Oil the hand and insert it into the rectum and search for bots or grubs. Remove the hand and look it over carefully for small round worms. Bots must be picked off with the fingers. For rectal worms inject a gallon of warm water in which a plug of tobacco has been steeped for some hours. Failing to find the cause within the rectum examine the skin of the tail by scratching several places, watching the lips of the horse at the time. When the spot which itches is reached the head will be turned and the lips worked, showing a desire to assist in the scratching. Treat by washing thoroughly with warm water and soap; dry; and apply a mixture of Eucamphol one part, water four parts.—F. G. M.

Profit in the Poultry Yard

Practical poultry people who may have ideas from their experience as to methods of feeding and housing and general care of poultry will confer a favor upon the Cultivator and its circle of readers by sending in concise accounts. Mrs. Basley is always willing to answer queries, which with the experience of others should make this a most valuable feature in poultry life on the Coast. Opinions or matters of a personal nature should be omitted, but a concise statement of facts is always valuable.

STATE POULTRY WORK.

By Henry Langenschwadt.

Fruit is one of the leading, if not the leading, product of California, all varieties taken together as a whole. The growth of this industry has been comparatively recent, in the past two or three decades. Success has not been accomplished without overcoming difficulties and solving problems encountered. Yet there is much to be learned, and many more problems to be solved. This will never end. One needs to be constantly on guard for insect pests and other things. The government, both state and federal, has been and is doing much to aid the fruit grower, having men engaged in certain lines of work gathering information and experimenting to ascertain facts, doing what private individuals never could afford to do. This is as it should be, and we are glad to see it so. The government cannot do too much of this kind of work, if money expended is spent wisely and in the right way.

Poultry is another of California's growing industries. The growth in some sections has been remarkable. The state can boast of having in one of its counties one of the greatest poultry centers known. There has been some state aid given the poultry man, but mostly he has been left to solve his problems at his own expense and experience. He has had much help from poultry work done in other states. Nevertheless the conditions are often so different here that same cannot be applied as there. The writer beileves the reason that more state aid has not been given to solution of the poultry man's difficulties is because it has not been asked for. If poultry men would insist more, they would receive more. There is instruction given in poultry work at two of the state's institutions, and it has been included in demonstration trains. The experiment station, it seems, has been discontinued. Such is the extent of state work being done.

Counting all the persons that have just a few, and those that have hundreds and thousands, there are probably more individuals interested in poultry than in any other branch of farm work. It is not alone those that are now interested, but the many, many more that will be. Poultry is being consumed as meat more and more, and will continue to be. Cattle ranges are being farmed. The increase in cattle will not keep pace with increase in consumption, so that the price of beef will be higher, and poultry will be used more. Poultry will be one of the big industries of the state.

The climate and conditions peculiar to the state confront you with difficulties in raising and keeping poultry different from those in other sections. The state can well afford to assist the poultry man more and extend him a helping hand. It ought to have a poultry department second to none in the country, engaging the best men to be had to conduct it. Let the poultry men get together and insist on it till secured. All cannot be accomplished in a day or in a month or year, but a start should be made. It will mean years of work to solve some of the problems. We have lots of them. Many are peculiar to this section. Our climate, soil, seasons, etc., are not like those elsewhere. It is said that one must learn all over again when he comes to California to raise poultry. This is true to a great extent. A few thousand dollars now will do more than five or ten times that amount ten years from now. The amount of money that could be saved annually if people knew more and better what to do when engaging in poultry raising would surprise you. It would pay for many poultry departments with best of equipments.

Poultry is receiving more attention in all parts of the country. One state after another is taking up the work, establishing a department for instruction and experimental work. We want to get in line. Not because others are doing so, but because we need it, and need it badly.

NOTES.

It must be evident to anyone who thinks that two very high-class birds being mated, their good properties must be in the blood of the progeny, even if they do not show outwardly. Therefore the breeder's task is to bring them out. This can best be done by pairing the best hen back to her father, the best young cock to his mother, or pairing two of the young together. It is a hundred pounds to a penny that such mating will bring the desired success, and if followed will prove both profitable and pleasurable; whereas the constant introduction of fresh blood can end in nothing but disaster and disappointment.—American Pigeon Keeper.

Age causes an egg to become stale and shrunken and it can never be classed as a fresh egg. Heat seriously affects the quality of eggs and in warm weather they should be gathered as often as possible. Moisture causes molds to develop and quickly changes the quality of the egg. Muddy weather means dirty nests, consequently dirty eggs. Nests built upon the walls of barns and hen houses are often used as roosting places, causing filth to accumulate, resulting in dirty eggs. Dirty eggs must be handled as second grades; washed eggs are just as bad. Eggs deteriorate in quality if they are left behind the kitchen stove or are stored in damp or musty cellars.

The poultry business is one of the safest and surest money producers if built up properly. Too many people go into poultry raising on a large scale and expect it to furnish a big revenue from the start, and so meet with reverses. The best way is to begin in a small way, and make the business pay a revenue from the start if possible, and increase the number of birds as conditions warrant. The experience that will be secured in working up the business will be worth many hundreds of dollars.

There is good money in geese for meat and feathers. Some object to these birds on account of their harsh noise. Geese are hardy, long lived, and subsist on grass and the cheapest of feeds.

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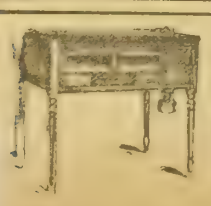

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CALIFORNIA POULTRY SHOWS.

Fresno—Dec. 12-16, 1911. Fresno Poultry, Pigeon and Pet Stock Association. Geo. R. Andrews, Fresno, Secy.

Santa Ana, Dec. 27-30. Orange County Poultry, Pigeon and Pet Stock Association. S. J. Jackman, President.

Napa.—Jan. 4-6, 1912. Napa County Poultry Association. Wallace-Rutherford, secretary.

Los Angeles.—January 4-10, 1912. Joseph E. Davis, Secretary, R. D. 1, Box 48, Los Angeles.

San Diego. — January 12-18, 1912. The Fanciers Club of San Diego. V. Davis, Secretary.

RAISING TURKEYS.

Since it is known that turkeys are harder to raise than chickens, ducks, or geese, when we hear of a breeder having great success in maturing the majority he hatches I am always anxious to know his method of doing things. There is a breeder in this county who has grown more turkeys, perhaps, than any other man living today. I had often heard of him through his friends, as he never advertises through the journals. Always has been able to sell his stock for breeding purposes due to his great success in growing them. It is not often that a man can build up such a trade privately, but this gentleman has done so and for that reason I have been anxious for years to visit his place in order to meet him personally. I had never been afforded this opportunity until this fall, when we made a trip to his place. On arriving we received a warm reception and were shown over his place and made to feel quite at home. Why it is that all men are not endowed with an agreeable disposition like this prince of men is a mystery to me. He was a free talker, a good entertainer and did not hesitate to reveal to us his method of handling his fowls.

After showing us his flock of turkeys he looked us square in the face and said: "What do you think of them?" I said: "Well, sir! This is just about as fine a flock of turkeys as one usually finds. I have seen larger flocks and of various sizes, but I don't think I ever saw a more uniform flock or better marked flock than yours. I am frank to say, your method of handling turkeys is certainly a good one and I would like to know your methods."

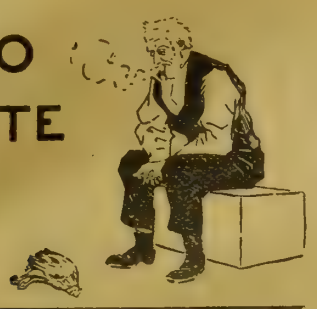
"In expressing your opinion of my flock you made the remark that you had seen larger flocks than you see here. Now right there is where I attribute largely my success. Turkeys bring a good price in the market, you know, and the majority of farmers try to grow too many turkeys in one flock. I learned years ago that large flocks of turkeys could not be grown successfully, hence I have never attempted over 60 or 70 turkeys in one season. Another thing: So many growers just turn their turkeys out and just let them go, never giving them any care whatever. I have noticed through the journals you advocate allowing the hens to care for the poults themselves and never feed any artificial food. I agree with you there, but I go just a little further than that. I like for the poults to depend largely on the mother turkey for their support, yet I always bring them home at night and make them go in that enclosure of wire netting you see there. I give them a small amount of wheat at night, never failing, and they always come home along about four or half past four and go into that enclosure of their own accord and if I am not there with the wheat when they arrive they always go up on the roost poles and wait my coming, for they know I will come. They don't know anything else, only to go in this enclosure at night. They never have roosted outside.

"Now, let me tell you another thing, which I am sure is the cause of all those poults living and looking as healthful as they do. I went to the tinner and had him make me a small funnel with a long slender spout about five inches in length, just large enough to allow it to pass freely down in the throat of the poults, passing the entrance of the windpipe. Every Tuesday morning I give one teaspoonful of milk and one drop of turpentine to each poult. On Friday morning I do the same thing, every poult gets his medicine regular. I give them this amount until they are two weeks of age, then I increase the turpentine to two drops and the milk to one and one-half teaspoonfuls to each poult. This is some trouble and a little work, but it pays. Almost all the turkeys died around here. I gave this treatment to mine as I always have done and never lost any. I have lost but three or four and I think the crows got them.

"Since this so-called black head has become so common in this country you have to give them this treatment. It immunes them from the disease and if you don't give it to them you can't raise them, that is all there is to it."

This is about the best thing I know of, if it will work and I am going to give this treatment a fair test another year. If it will work for one breeder it should work for all and from what I saw at this farm certainly stamps quite a bit of faith in me as to the merits of the treatment. I have used castor oil and turpentine and some milk and turpentine on the growing stock in the fall when they feed too freely on green corn and find it corrects almost all forms of bowel troubles, but never did give it regularly to the poults. However, I have great

TOO LATE



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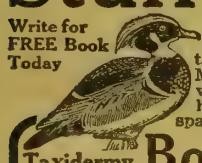

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faith in the treatment and believe it will do the work. The enclosure this poultryman mentioned for his turkeys to roost in was built directly in front of his large brooder house he built for his young turkeys. It was inexpensive and consisted of four posts with woven wire stretched around them and over the top a plank six inches in width was run along on the bottom. A neat handy gate was placed at the end and stood open through the day. Comfortable roost poles were placed inside this enclosure which was ten by twenty, making it sufficiently large for 75 or 80 poults to roost in comfortably. At night the gate was closed and locked, no "varmints" could enter and any thief would have trouble in getting inside unless he cut the wire. I am convinced that his methods of growing turkeys is a good one and one that is worthy the consideration of every turkey grower who has had trouble with this fatal black head. —Farmer's Guide.

SCIENTIFIC FEEDING FOR EGGS.

There is too much haphazard feeding among poultry men. Feeding should be so arranged that egg production would become a certainty and not a lottery.

It is safe to assume that "free range" poultry generally are fed nothing but corn. They are left to their own free will to eat all the bugs, worms and greens they can find. That will do very well for a season, but the time will come when the animal and vegetable foods become limited and finally exhausted. Then it is necessary to supplement natural by artificial means.

If allowed absolute freedom among all kinds of foods it is a debatable question whether a hen will "balance" her own foods.

For all practical purposes we will consider all foods as resolved into three elements only—protein, carbohydrates and fats.

Each of these elments is subject to further resolution, but they are not considered in the balancing of rations. The protein element is nitrogenous and is exclusive and independent of fat and the carbohydrates, yet, if overfed, may have a fattening tendency. It is the "lean" of foods and is used to build up muscular tissue. The fats are composed of ether extract and are used for fuel and strength. They are used largely in winter for bodily warmth. In summer this element must be limited.

Carbohydrates are used largely to give form to the organism and to a limited extent take the place of fats in supplying heat and energy. These three elements must be used in the proper proportion to secure the maximum egg production, so desirable. Right here I must state that the analysis of foods has been found to vary so much that I am compelled to use what may be designated as average composition. To be absolutely scientific each feeder would have to be his own chemist. So it may be safe to conclude that science itself is limited or progressive. Not being a chemist myself, I shall be governed in all my calculations by the average composition of foods as found in Bulletin No. 23, of the Agricultural Department of Washington, D. C.

As has been indicated before, the proteins, carbohydrates and fats must be correctly proportioned for best results. Scientists have decided to call this arrangement the feeding ratio. From experience it has been found necessary to change the ratio with the variation of temperature. For our calculation I will divide the feeding year into three seasons—the hot, the cold and the temperate periods. The hot period occupies the three hottest months, the cold period the three coldest months, and the temperate period the three months between the hot and cold periods. We shall further designate this as the transitional period. Now, when we make use of one pound of protein and four pounds of carbohydrates and fats combined the ratio is said to be 1:4. This is a good feeding ratio for the hot summer period. I therefore submit the following table for our guidance the coming year:

June, July, August feeding ratio	1:4
September feeding ratio	1:4.25
October feeding ratio	1:4.5
November feeding ratio	1:4.75
Dec., Jan. and Feb. feeding ratio	1:5
March feeding ratio	1:4.75
April feeding ratio	1:4.5
May feeding ratio	1:4.25

You will observe that as the cold season is approached the carbohydrates and fats are gradually increased, also they are decreased as the summer period is approached. In other words, the colder the weather the wider the ration, and the warmer the weather the narrower the ration. That arrangement is calculated to prevent an overproduction of fat at any time of the year and at the same time allow the hen to eat all she wants at all times.

Send in your list of foods to be formulated a month ahead of time that each formula may appear in due season for each month intended.

INFERTILE EGGS KEEP BEST.

A large part of the heavy loss from bad eggs can be obviated by the production of infertile eggs. This has been demonstrated beyond a doubt by the investigations concerning the improvement of the farm egg which during the past two years have been conducted in the Middle West by the Bureau of Animal Industry of the Department of Agriculture.

Secretary Wilson of the Department of Agriculture estimates that, between the producer and the consumer, there is an annual loss of $45,000,000 in the egg crop of the United States, the greater portion of which falls on the farmer, who is by far the largest producer. Of this enormous loss, about one-third, or $15,000,000, is caused by heat which develops the embryo of the fertile egg, causing what is known to the trade as a "blood ring." As it is impossible to produce a "blood ring" in an infertile egg, such an egg will stand a higher degree of temperature without serious deterioration than will a fertile egg.

The secretary says that if farmers and others engaged in the production of eggs would market their male birds as soon as the hatching season is over, a large saving would be made, as practically every infertile egg would grade a first or second if clean and promptly marketed.

Alfalfa is an egg producing material. It is rich in nitrogen and mineral matter, thus providing the hens with substances that are derived from it in forms most suitable for the purpose desired. Lime is an essential substance in the production of eggs, and there are some that use oyster shells for supplying the hens with lime, but alfalfa contains lime in a soluble form and ready prepared for use. The various grains are deficient in lime, and when poultry receive no food but grain, it is impossible for the hens to lay perfect eggs, many being soft shelled. When the needed elements are supplied, and the hens lay regularly, the carbonaceous matter is appropriated by the eggs, but if the hens do not lay, they become fat and remain in a condition that invites disease. Alfalfa or clover by displacing grain, supplies the hens with substances which are lacking in grain and also provides bulk food and heating food. It is good both in the dry and green state and happy is the poultryman who has an alfalfa patch for his hens to wander in. They can get animal and green food at the same time. If you don't raise alfalfa yourself, buy it by all means and save half your grain bill.—Colemans'.

Lee's Egg Maker

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BEAUTIFUL "OAK DELL HOME."
No. 666 Cal.—Situated 3½ miles from the thriving town of Escondido; contains 132.44-100 acres, about 30 acres of alluvial soil around and near the house, several acres more of good land on different parts of the ranch. Many beautiful live oak trees on the ranch, and one especially fine, standing in the front yard; splendid well of water with windmill and tank; brand new bungalow of six rooms, modern and well built; new barn, 20x37 feet, 16 feet to comb; store room, 12x32, divided into three rooms. Stone house 10 feet square in the clear with cement floor, thick walls, making a cool place to keep canned fruit and milk. Good woodshed. One of the desirable features of the bungalow is a fine chimney and fireplace. Abundance of wood on the place makes this desirable and practical. There is abundance of living water in the creek that runs through the place; this is one of the most desirable features of the place. This place is truly one of nature's beauty spots, and would be fine for a resort. Must be seen to be appreciated. The mountainous land is fine for pasture. F. J. Conrad, "the Hustler," Escondido.

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Large list of orange groves in best districts. Seven years' experience in growing oranges.
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12 ft. steel aermotor, fine steel tower, tank, galvanized pipe, pump complete; nearly new 10 ft. aermotor, tower, 5000 gal. tank, 22 ft. tank stand, 2-inch galvanized pipe, pump complete, $75; also smaller outfits, $39 and up.
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Another 1½ H.P. Fairbanks, $55; 2 H.P. Fairbanks, brand new, $69; 6 H.P. Holly, $39; 18 H.P. Western, $450; 32 H.P. Fairbanks, $550; 40 H.P. Western, $600.
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For Sale—Extra fine stock of Strawberry Guava. We have them by the 100 or by the 1000, potted or in flats. Also Loquats, Palms, Roses and a full line of Ornamental stock. Orange County Ornamental Nursery, Fullerton, Cal.

Plants of all kinds, wholesale and retail, at Las Palmas Greenhouses, **Palo Alto,** Cal. Contracts solicited. **Let us know** your needs at once.

Conifers balled, flowering acacias, potted eucalyptus, Rex begonias, small ferns. Wholesale, retail. Ballou's Nursery, Pasadena, Cal.

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A few extra fine young toms at reasonable prices. Eggs and young poults for sale after March 1st. Now is the time to order. Write wants. Mrs. W. D. Root, 735 Verdugo Road, Glendale. P. O. address, R. D. 1, Box 105, Los Angeles.

See Here. If you want some of the best stock in this world, we have it. All thoroughbred S. C. R. I. Reds, Black and White Minorcas, Crystal White and Black Orpingtons and Barred Rocks. Orders filled as catalogued. Baby chicks, hatching eggs, cockerels, and a few pens. Address, Monte Rio Poultry Yards, Newcastle, Cal.

For Sale—Thoroughbred S. C. White Leghorn eggs for hatching. Well known Quality Egg Ranch strain. Price the very lowest.
"Bred To Pay"
Trade Mark.
Quality Egg Ranch, Artesia, Cal. P. E. Santa Ana line to Coyote Sta.

The Goodacre strains—23 more ribbons and silver medal at Phoenix; seven firsts, Stockton, etc. Breeding stock for sale, a few chicks also. Buff Orpington, R. I. Reds, White Leghorns and Anconas. White Runner ducks. Goodacre Bros., Compton, Cal.

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Just Hatched White Leghorn Chicks every month, from select, heavy laying, mature stock. No pullet eggs used. Lodi Hatchery, E. Elm St., Lodi, Cal.

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Very fine strain Barred Rock cockerels. Now booking orders for baby chicks and eggs; also S. C. R. I. Reds, headed by my $50.00 male to special high-class females. R. B. Sherman, Newcastle, Cal.

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Barred Plymouth Rocks (Hawkins Royal Blue Strain). Cockerels, day-old chicks and eggs for hatching. Enoch Crews, R. No. 1, Santa Cruz, Cal.

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For Sale—Choice thoroughbred White Rock cockerels. Also eggs. Address A. G. Morley, Kern, Cal., R. F. D. 4.

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Fifteen S. C. White Leghorn roosters, 6 months old, from heavy laying stock. L. T. Smith, Beaumont, Cal.

POULTRY

Kellerstrass Crystal White Orpington Eggs, $2 per 13. R. L. Warren, National City, Cal. R. D. 1.

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Imperial Valley Fruit Ranch to Let—160 acres in early table grapes, apricots, alfalfa and cotton; 2 miles from county seat. Tenant must have experience, and $3,000 capital to furnish labor. Address Horticultural Dept., 205 Grant Building, Los Angeles, Cal.

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Have You a Cow?—Have you a creamery? Have you a cheese factory? Write us. Everything used in either a dairy, creamery, cheese factory, or for handling milk, cream, butter or cheese. We are in a position to quote you prices on entire creamery or cheese-making outfits. We make a specialty of only the latest and best sanitary machinery and supplies. Send us a list of what you want, and we will quote prices which we feel certain will interest you. O. J. Weber Co., 226-227 East Sixth St., Los Angeles, Cal.

Auction Sale

75 FINE DAIRY COWS

On the **Maplewood Ranch,** 2½ miles south of Downey, 1 mile east of Clearwater, and ½ mile north of

CRUTCHER.

Take Santa Ana Electric Cars to Crutcher, and walk ¼ mile north.

Tuesday, December 12, 10 O'clock A. M.

Stock consists of 70 head of fine dairy cows, nearly all large, fine Holsteins, a few choice Jerseys and Durhams, all large, rich milkers; many now fresh, balance coming in soon; all in pink of condition—in fact, an exceptionally fine lot of dairy cows. Purchasers looking for first-class dairy stock should not fail to attend this sale.

6 calves, from 3 to 6 months old; one 12-months-old Holstein bull from Mr. Pellessier's herd, near Whittier. This bull is sired by a registered Holstein, and from one of Mr. Pellessier's best cows; an exceptionally fine and well bred individual.

IMPLEMENTS—Heavy farm wagon, light farm wagon, milk wagon, Milwaukee mower, hay rake, disc, corn planter, gang and walking plows, scraper, power feed mill, Cultivators, harrows, seeders, corn sheller, leveler, double and single harness, buggy, 20 tons good oat hay, 1 ton corn in ear, small tools, lumber, etc.; in fact, the complete equipment of the Maplewood Ranch.

Having leased the ranch, owners have instructed us to dispose of their complete outfit on above date, **positively without limit or reserve.** Prospective purchasers are requested to visit ranch prior to sale and see these cows milked. Free lunch at noon.

TERMS: $100 and under, cash; over that amount, one-quarter cash, balance six months' time, with note and approved security and 8% interest. Liberal discount for cash on time sums.

Do not miss this genuine closing out sale.

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Phones—Main 1259, F1259.

SAVING THE SUNSHINE.

Most true conservationists will agree with the Secretary of the Interior in his condemnation of those loud talkers who spend their energies in discussing the wickedness of waste without at the same time being willing to assist in any practicable plan to stop the evils they so greatly deplore. We suspect, however, that few, even of those good citizens who believe in the wisest use of natural resources and who are sincerely eager to safeguard the public good both now and hereafter, realize how easy it is to neglect opportuntities for conservation which lie at our door. The coal and forests in Alaska are of vast importance, but the discharge of our duty with regard to them will not occupy much of our time. A nearer need is to see that we make the best use of natural resources in our own back yards. How about making "two blades of grass grow where one grew before?" Why isn't that just as important as keeping the coal or saving the streams or doing any of the thousand and one things that we individually can only talk about? Our truest conservationists are those gardeners and farmers who catch the sunshine and husband the rain and strive intelligently to keep pace in production with the increase of the non-agricultural population.

The very greatest product of land is derived from "intensive gardening." Through generations of intelligent selection and breeding thoroughbred seeds have been developed whose yield far surpasses in quality and quantity that of the ordinary strains. You can be a true conservationist if you have a successful garden. Be sure, however, to start right by planting thoroughbred seeds. These can be bought of seedsmen having sufficient capital and experience to know what they are about and a reputation to maintain.

MEAT SUBSTITUTES.

Meat contains the compound necessary for the growth and repair of body tissue. In selecting foods to take its place, one must choose those having this compound.

Milk contains all the food principles and may be used as a substitute for meat. As cottage cheese it is particularly rich in protein, the tissue building compound.

Eggs are a valuable substitute, as they can be served in such a variety of ways. Besides the various kinds of omelets, the poached egg, the boiled egg, the fried egg and the scrambled egg, they may be served with cheese, tomato sauce, white sauce, as a souffle or salad eggs.

The two following recipes make attractive and appetizing dishes:

Egg Timbals.

Make a white sauce, using 1 tablespoon butter, 1 tablespoon flour, and ⅔ cup of milk; to this add the yolks of 3 eggs, beaten until thick and lemon colored; 1 tablespoon chopped parsley, ½ teaspoon salt, ⅛ teaspoon pepper and a few grains celery salt. Beat the whites of 3 eggs until stiff and dry, then cut and fold into the first mixture. Turn into buttered molds, set in a pan of hot water and bake in a slow oven until firm. Remove from molds and serve with tomato sauce.

Tomato Sauce.

Cook 1¾ cups stewed tomatoes with 1 slice of onion, ¼ teaspoon salt, 2 teaspoons sugar and ¾ teaspoon pepper 15 minutes, strain and add to 3 tablespoons of flour which has been mixed with 3 tablespoons melted butter.

Eggs a la Goldenrod.

Make a thin white sauce, using 1 tablespoon butter, 1 tablespoon flour and 1 cup milk. Chop finely the whites of 3 hard boiled eggs and add to white sauce with ½ teaspoon salt. Cut 4 slices of toast into halves lengthwise, arrange on a platter and pour the sauce over. Force the yolks of the eggs through a strainer or potato ricer and sprinkle over the top. Garnish with parsley and toast points.

Cheese is even richer than eggs in the tissue building compound, and, according to investigations recently made by the government, is easily digested when properly prepared. Cheese may be cooked with macaroni, potato or rice. It may be served on toast, as rarebit, or made into a souffle or fondue.

Among the vegetables which may be used in place of meat are the lentils, peas and beans.

Almonds, pistachio and peanuts are rich in tissue building material, while filberts, walnuts and pecans also contain a considerable amount.—Charlotte Carpenter, Colorado Agricultural College.

DO A LITTLE PAINTING.

Why not use a little paint occasionally, good people? Not long ago a painted farm building was a curiosity, but farmers are learning that paint is a good investment. It prolongs the life of buildings, adds value to the price of the farm, and helps to make a "home beautiful."

Buildings last 25 to 50 per cent longer if painted, says C. F. Chase, assistant in farm mechanics at the Kansas State Agricultural College. That means that a building which would last 50 to 75 years unpainted would last 75 to 125 years if painted. It is the same with certain fences and farm implements. It is easy to see that paint saves money.

Unquestionably, paint raises the value of a farm. A place with well-kept buildings, painted regularly, will sell for from one-half to five or ten times more than it would if it wasn't well kept. The story of an Ohio farmer's experience with paint proves this. A farmer in that state wished to sell his homestead. He had allowed it to run down until the fences were very poor and the house and buildings were a disgrace to the neighborhood. Finally a wide-awake man came along and purchased this farm. He spent $200 in painting the buildings and repairing the fences and tidying up in general. Within two months he sold the place for $1600 more than he paid for it. He did nothing to the crop-producing power of the soil. He had only made the farm neat and attractive and much more "homey."

In making the "home beautiful" perhaps the largest and best paying investment is effected. Who cares to live in an old sunburned house that never felt the touch of a paint brush? Who would blame a boy or girl, either, for running away to town to get away from it? And yet only a coat or two of paint would work a great change. The old home would have a fresh, neat appearance.

PAPAYA.

(Continued from Page 581.)

seed from roundish, melon shaped fruits, which mostly grow on female plants.

All male plants should be destroyed wherever they appear, as not only are they unproductive, but by their pollen being carried to the fruiting plants they tend to produce degenerate plants when these are grown from the seed produced on plants growing in the vicinity of the male plants.

There is no need to fear that the other plants will not fruit if the male papayas are destroyed, for the reason that there are always plants about having perfect flowers and which provide sufficient pollen for the fructification of the female plants. This applies particularly to the Hawaiian papaya.

General Remarks.

The papaya is very impatient of water standing around the roots, and should be planted only on well drained land; being easily injured by strong winds, it should be planted in sheletred situations.

Keep the land clean of weeds and the plants well mulched.

Limited quantities of seed of a superior variety of papaya may be obtained, free of charge, upon application to the Director of the Bureau of Agriculture.

NEW TRAPPING LAWS.

The wide variation in trapping laws in various states makes it quite necessary for the trapper and farmer to be in close touch with game legislation at all times. The old saying that "ignorance of the law excuses no man" has caused regret in the heart of many only when it has been too late.

As a rule, the professional trapper makes it his business to become acquainted with all new laws regarding hunting and trapping, but there are many farmers and amateur trappers who are not as familiar with game laws as they should be.

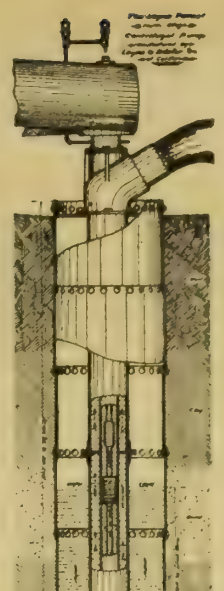
These people will be glad to learn of a book which is now being distributed free by F. C. Taylor & Co., of St. Louis, Mo., the world's greatest fur house. This book gives game laws of every state in the Union and Canada. It also tells how and when to trap, what baits to use for various animals, and reveals some trapping secrets which have always been carefully guarded by trappers in the past. We suggest that those of our readers who are interested in hunting or trapping send for a copy of the book.

NON-PULSATING PUMP.

We call attention to the announcement of the Dow Pumping Engine Co., on another page.

The desirability of a non-pulsating type of pump is admitted by all engineers, and while the Dow Company has frequently been asked to market a non-pulsating pump, they refused because they believed such a machine, with the quality they demand in their standard pumps and compressors, could not be developed. However, after long experiments their engineers have at last devised a non-pulsating pump without the complicated gears and sliding connections usually found in such a machine.

We would suggest that our readers who are interested in deep well pumping, secure advance information regarding this pump, as when it is illustrated and the advantages it has over other pumps are divulged, the factory will undoubtedly be swamped with orders, and you are well aware of the inconvenience when everything is ready and you cannot get delivery on your pumping plant.



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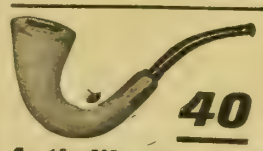

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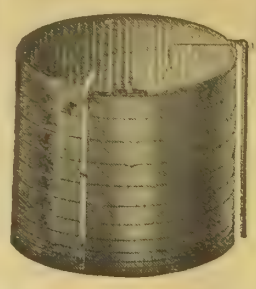

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Questions and Answers

THE EDITOR AND STAFF

Cotton Seed Meal.

What value has cotton seed meal applied to field planted to onions? Onions just coming through. Soil is loose, sandy loam. Was in cantaloupes last spring, alfalfa five years preceding.—Subscriber, Imperial.

Cotton seed meal is a valuable fertilizer, but it must be borne in mind that it is not particularly quick acting. It requires certain bacterial action after it is applied to the soil. It is rich in nitrogen and contains some phosphoric acid and potash. Analysis of average sample shows one ton to contain about 100 pounds of nitrates. At 15 cents per pound this would be valued at $15. Of phosphoric acid it contains about 34 pounds, which at 6 cents would be valued at $2.04. It also contains about 30 pounds of potash, which at 7 cents a pound would be valued at $2.10; showing a total of $19.14. Note that the prices given may be somewhat low for material f. o. b. Los Angeles. In other sections these prices would vary slightly. Far more economical use of cotton seed meal is secured by feeding first to livestock and then applying the manure to the land. Fully three-fourths of the original fertilizer will remain in the manure.

Fumigating.

How long should a tent remain over a tree when fumigating for black scale? What quantity and proportions should be used on orange trees?—Subscriber, Alhambra.

Forty minutes to an hour is the usual time. If our subscriber will refer to our Spraying and Fumigation Calendar, issue of November 3, 1910, he will find under "Hydrocyanic Acid Gas": "The amount of chemicals necessary for success in fumigation varies according to size of tent, density of foliage and weave of cloth of which tent is made, but approximately we may say that one ounce of cyanide to each 100 cubic feet of space, exposed for one hour, is a reasonably strong dose. For black scale and similar easily killed insects, such a dosage is sufficient. The proportions are: Potassium cyanide, 1 ounce; sulphuric acid, 1 ounce; water, 3 ounces." If the subscriber wants more particular information he may secure it by writing to the U. S. Department of Agriculture, Department of Entomology, for Bulletin No. 90, Part One, "Fumigation of Citrus Trees," by R. S. Woglum.

Divorce.

If subscriber at Selma will write, giving name, it will be kept entirely private, but until name is sent, answer cannot be given.

Productiveness of Oranges.

What is the average number of boxes obtained from one orange tree at the age of four, five and six years? I mean under ordinary conditions. I have heard the claim made for twenty boxes on a six year old tree. It sounds pretty high to me, an Easterner just entering into this fascinating vocation. By boxes I mean picking boxes. How many picking boxes to the packing box? Wish this that I may figure out the profits at $1.50 per box.—Subscriber, Fresno.

Our subscriber is very wise to take with a grain of salt, even several grains, any twenty box claim for a six year old orange tree. Divided by four it will come nearer to the average, and even at that, or say, to be a little more liberal, six boxes per tree, there is big profit to the orange grower. The truth about California fruit is good enough. Three picking boxes are usually considered equivalent to two packed boxes of fruit. As a word of caution to our new subscribers we would suggest that the $1.50 per box also be shaded slightly. This has been received many times, and we trust will continue to be, but in figuring profits over a series of years $1.50 is perhaps a high average.

Wistaria.

Will wistaria do well where we have frosts and ice at times during the winter? Elevation is 2,130 feet. White honeysuckle does not freeze.—Subscriber, Hemet.

Wistaria will do well so far as the winter frosts are concerned, and we do not think the elevation would in any way be a detriment.

Pruning Apricots.

I have a young apricot orchard which has been top pruned every year. Have had good crops, except that this year there was none, owing to frosts. At pruning time this year should I thin out the tops by light pruning or not, leaving trees to be top pruned after next fruiting season? The trees are of the Tilton variety.—Subscriber, Selma.

We should certainly top prune the apricots. After a vigorous year's growth the limbs are reasonably sure to be long enough to give immense fruit bearing space, which would result in such a heavy crop that injury to the tree and inferior fruit would probably result. We have not had experience with the Tilton variety, but if the Royal, would prune off one-half to two-thirds of the past summer's growth. Will some of our friends who have grown the Tilton give us their experience?

Olive Cuttings.

What is the best time of the year for cutting "slips" for olive cuttings, and how should they be set? How will olives do in land which has water near the surface in winter? Will they stand more cold than oranges?—Subscriber, Porterville.

If by "slips" our subscriber means hard wood cuttings, any time during the next two months will be the proper time for making them. These may be of the size of a lead pencil or from that up to even stove wood size. Of course we would not recommend the latter, but say one-half inch in diameter, ten or twelve inches long, makes desirable cuttings. Possibly the subscriber means herbaceous tips, which are rooted under glass in sand. That is the usual nurseryman's method of propagating olives. The ripened wood cuttings, however, are easily rooted in ordinary sandy soil, buried two-thirds of their length, the same as grape or other cuttings are rooted. We would prefer better drained land. Do not think it would be well for olive trees to stand for any material length of time in water logged land. As to cold, the olive will perhaps stand more than the orange, but if the frost comes—as often it will—before the fruit is gathered, it is ruined for pickling purposes. The recent frosts in the San Joaquin Valley destroyed thousands of tons of pickling olives.

Dynamiting Vineyards.

Having seen much in the Cultivator about blasting ground, I will ask if it would injure grape vines to blast between rows which are ten feet apart. The soil is mostly sandy loam on top, with spots of hard alkali where vines will not grow at all. The loam is from

one to two feet deep; below that comes the hard Imperial clay strata, varying in thickness. How deep should the charge be placed in such ground? Will it pay to blast for field crops?

It is possible that by placing between alternate rows this year and the others the following year, no injury whatever would be done to the vines. The charge should be placed deeply enough so that a hole will not be blown out, only the hardpan broken and forced up sufficiently to allow more perfect drainage. If the alkali spots are partly caused by improper drainage, breaking up all the hardpan, allowing the alkali to be washed away by heavy rains will prove most beneficial. Be sure and place the charge underneath the hardpan. It will not pay to blast for field crops.

Muscatel.

Is the Muscat and the Muscatel grape one and the same?—Subscriber, Beaumont.

In most nursery catalogues we do not find the Muscatel given. Wickson's "California Fruits" gives "Muscatel, syn. White Frontignan," also "Muscatel Gordo Blanco." This is said to be not so long a grape as the Muscat of Alexandria. The book adds: "If the Muscatel would set as well as the Muscat, the difficulty would be obviated." From this we take it there is a Muscatel as well as a Muscat.

Eucalyptus Oil.

For what is eucalyptus oil given internally?—Subscriber, Artesia.

Eucalyptus oil is given internally as a tonic, and is also often taken for colds instead of quinine. It is usually administered in capsules or in emulsion.

Pecans.

I wish to plant pecans around farm. Will they do well in the Sacramento Valley? Can the trees be started from nuts and which is the best for this valley? Where may the trees be secured?—Subscriber, Chico.

As to whether the pecan will prove generally profitable in the Sacramento Valley, we do not believe any one is qualified to say at this time. They are being planted more or less in all parts of the state, but they are not the favorite they are in Texas and many parts of the South, but some which have proved to be desirable trees have been planted and have borne especially fine nuts. Profitable trees are now growing in Visalia and in your own town. This will give an idea as to whether they will do well in your section. About San Francisco Bay they have not as a rule proven profitable. So few of the trees have been grown that no market has been developed and it will not be possible to make a prediction as to their profitableness. The trees may be grown from the nuts if they are fresh. Of course one should secure varieties which are of highest quality and known to be good bearers. Then a small proportion of the trees may prove to be desirable and the remainder may be grafted. The nuts should be germinated and planted in a nursery row, and after the first year transplanted in orchard form. Some prefer planting nuts where the permanent orchard tree is to be, but we do not advise that method. Nurserymen advertising in the Cultivator can supply you.

Nitrate of Soda.

I have been advised to apply solution of nitrate of soda to my garden. What per cent should it be? Am told that nitrate of soda can be made from carbonate by treating with nitric acid. I have a spring which contains .0085 per cent carbonate of soda. Can that water be converted into solution of nitrate of soda?—Subscriber, Globe, Arizona.

We see no advantage in making solution of nitrate of soda for the garden. Simply sprinkle over the surface and work into the soil a little. For potted plants where it is desired to have it safer of application, one teaspoonful may be dissolved in a gallon of water. The waters of your spring can not be changed so as to make them beneficial. In fact they are so heavily charged with carbonate of soda—the black alkali, so destructive to plants—that you should not use it at all.

Trespassing Chickens.

If K. C. will send full name, will send former copy of Cultivator which fully answers.

Chick Feed.

Please give formula for making little chick feed.—Subscriber, Earlimart.

As a beginner you will do best by purchasing one of the standard chick feeds sold by the poultry supply houses advertising in our columns. Always remember that the greater variety of grains or seeds the better and stronger will be the chickens. Also when you want to stop feeding chick feed begin not by stopping the feed but by adding to it wheat and kaffir corn and keep increasing the quantities of these as the chickens eat it. Also give the little chickens plenty of green food such as lettuce, dandelions, cabbage and alfalfa.—Mrs. A. B.

Red Apples.

Mr. J. W. Gregg of the Gregg & John ranch on the Banning-Idylwild road, shows to us apples of remarkable beauty and quality. They are the Baldwin, the old timer, with a color of a deep red shading to almost a black. The Banning country is proving a remarkable apple producer and more extensive planting will doubtless be made within the next few years.

The Feed Problem.

I wish to make two inquiries to be answered through the columns of your paper. First, I keep white Leghorn hens and pullets for laying stock, and would like to know if you would advise keeping wheat before them at all times? Have a friend who has been

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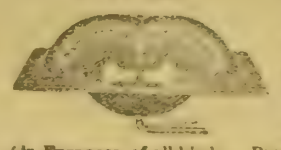

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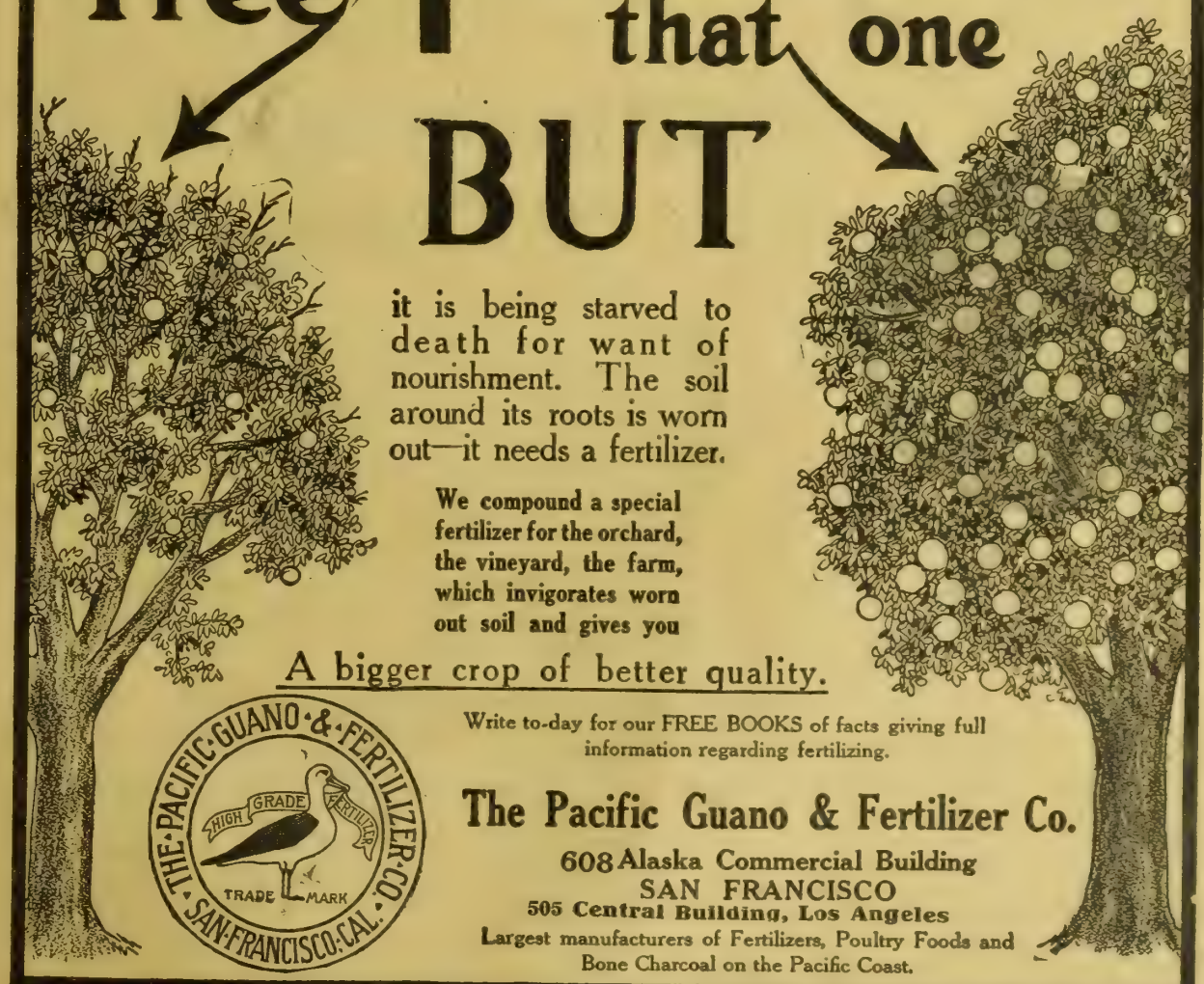

it is being starved to death for want of nourishment. The soil around its roots is worn out—it needs a fertilizer.

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very successful with his Leghorn layers following this plan. Mine receive bran mash mixed with beet pulp and small quantity of egg-maker in the morning; green feed and table scraps at noon; and wheat in the evening; on cold days whole corn is fed at night in place of wheat. Once a week I feed green cut bone. There is plenty of grit and oyster shells in yard all the time. With this ration, what do you think of the wheat plan, or would it make the birds too fat. There are 42 birds in the enclosure, which is about 50x70. Second: In issue of Nov. 16, "Hatching and Rearing Turkeys by Artificial Methods," some statements are made directly opposite to the views of Mrs. Basley. Does this article apply more particularly to Southern California conditions, or would a modification be necessary?—Subscriber.

We would advise if you want to keep wheat before your Leghorns all the time that you feed it in deep straw in the scratching pen; by this means they will exercise for it and will lay many more eggs than if they can get it without exercise. Your plan of feeding is good and the only advantage in keeping wheat before them all the time would be to induce exercise. Second. There are many different ways of arriving at the same end. The only radical difference in feeding turkeys at the Washington Station from Mrs. Basley's method is that they gave them a little corn mixed with the other grains, but you will observe that the writer says, "The most surprising thing in connection with the feeding was the small quantity of these grains consumed, which was evidently due to the very liberal supply of milk and green stuff provided." These turkeys had the sense or instinct to take the green stuff and the milk in preference to the grains. Try both methods and then decide for yourself which suits this climate best.—Mrs. A. B.

Chicken Pox.

Swellings like little lumps have appeared on the heads of the Leghorns, which in time goes to their eyes and makes them blind. They would starve in time. We do not know what to do for it.—A. C.

It is chicken pox. The cure is to grease the spots with carbolic salve and give a little powdered sulphur in the food, not more than a quarter of a teaspoonful three times a week to each hen. See several of the recent Cultivators for a full description of this disease and the cure.—Mrs. A. B.

Gangrene of Ovaries.

We often find in dressing hens a number of little eggs or yolks will be very dark and hard like a piece of meat. Some hens have died from an inflamed condition, as we supposed caused by this. What is the cause, and is there a remedy? Seem very fat and well, but find them dead.—Mrs. G., Glendale.

The symptoms you describe are those of gangrene of the ovary. Dr. Salmon in his Diseases of Fowls, says, "The cause of this trouble is not well understood. It has been attributed to the birds being too fat, thus compressing the ovary and hindering the evolution of the ova. Death is caused partly by peritonitis and partly by the absorption of the products of decomposition." There appears to be no cure, but it is hardly found in birds that have plenty of exercise of scratching.—Mrs. A. B.

Roup—Wrong Ventilation.

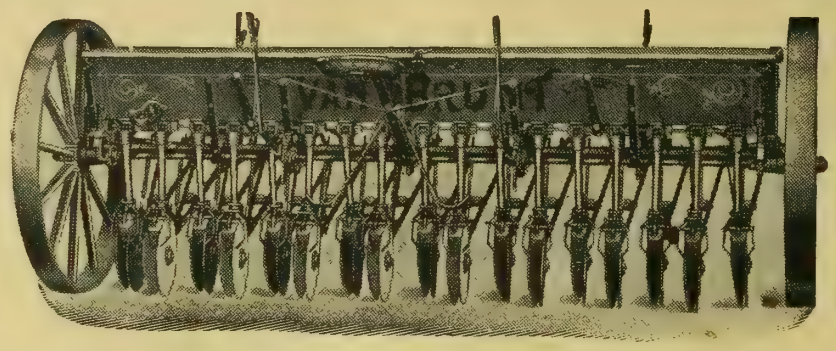
Pullets have one eye swelled closed and cankerous substance around mouth. Is this roup? What is proper ventilation for houses?—Mrs. J. J. G., Acampo.

Your birds have either a severe cold or the commencement of roup. Swab the mouth with peroxide of hydrogen one day and the next with four grains of sulpho carbolate of zinc in one ounce of distilled water. In ventilating the house be sure to not have a draft. A draft in this country is certain to give swelled up eyes or head and colds of various kinds, and these colds are more or less infectious (as in the human family) so you did right to segregate the sick. I know there must be some drafts in your henery because otherwise you care for your fowls so well that they could not be ill. Arrange to have all the ventilation on one side so that there can be no draft over or on the fowls.—Mrs. A. B.

How Much Food.

What is the proper amount of mash for a hen, wheat being fed in the litter in the morning and mash in the afternoon? Is a pound of mash too much for a dozen hens? Also as to mating Orpingtons and Anconas. I have these two breeds, also Leghorns. Should dark hens be mated to light cocks or dark with dark, and light with light, to get the proper coloring?—C. M. T.

The feeding problem is one that puzzles many a beginner. I advocate the "full and plenty" method, but if you want to weigh or measure you can give one ounce per pound weight of a hen per day. That is, feed a hen that weighs six pounds six ounces of food. Another good way is to weigh out three ounces of grain or by-products for each hen. See how high that comes in your measure and feed that, adding to it the green food and the house scraps and one-half ounce of meat meal or beefscraps. Of course you know that a hen that is laying requires more food (to make the egg) than a hen that is not. A pound of dry mash would be about half enough for twelve Leghorns. The Standard requires the male of the Buff Orpington to be darker than the female. So if you are mating for males use the dark female, and vice versa. The Anconas mate according to the chart in "Western Poultry Book" and the Leghorns the dark males on the light females. Of course it would be difficult to tell without seeing yours what would be the best mating for you, but if you read the chapters on mating you can judge fairly well for yourself.—Mrs. A. B.



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WET WEATHER TALK.

It ain't no use to grumble and complain;
It's jest as cheap and easy to rejoice;
When God sorts out the weather and sends rain,
W'y, rain's my choice.

Men giner'ly, to all intents—
Although they're ap' to grumble some—
Puts most their trust in Providence,
And takes things as they come;
That is, the commonality
Of men that's lived as long as me
Has watched the world enough to learn
They're not the boss of the concern.

With some, of course, it's different—
I've seed young men that knowed it all,
And didn't like the way things went
On this terrestrial ball!
But, all the same, the rain some way
Rained just as hard on picnic day;
En when they railly wanted it,
It maybe wouldn't rain a bit!

In this existence, dry and wet
Will overtake the best of men—
Some little skift o' clouds 'll shet
The sun off now and then;
But maybe, while you're wonderin' who
You fool-like lent your umbrell' to,
And want it—out'll pop the sun,
And you'll be glad you ain't got none!

It aggervates the farmers, too—
They's too much wet, er too much sun,
Er work a waiting round to do
Before the plowin's done;
And maybe, like as not, the wheat,
Jest as it's lookin' hard to beat,
Will ketch the storm—and jest about
The time the corn's a jintin' out!

These here cy-clones a foolin' round—
And back'ard crops—and wind and rain,
And yit the corn that's wallered down
May elbow up again!
They ain't no sense, as I kin see,
In mortals, sich as you and me,
A faultin' Nature's wise intents,
And lockin' horns with Providence!

It ain't no use to grumble and complain;
It's jest as cheap and easy to rejoice;
When God sorts out the weather and sends rain,
W'y, rain's my choice.

—James Whitcomb Riley.

ALONG THE PERILOUS WAY.

How Shag, the Timber Wolf, Returned to the Home of His Youth.

The day was very warm for early May, and Shag, the big gray timber wolf at the street railway company's park, lolled lazily on the ground in the corner of his pen. Two feet behind him a coarse wire netting separated him from the adjoining coyote enclosure. Close to the netting were two coyotes, apparently lying, but in reality crouching, with their cunning yellow eyes fixed eagerly upon the hindmost parts of the big wolf. At length Shag gave a half roll and swung his tail backward against the netting. Instantly there was a double snap, as two sharp coyote snouts shot through the meshes and attached themselves to the timber wolf's tail.

Then the air was convulsed with terrible din. Shag freed his imprisoned member—or most of it; for coyotes have sharp teeth. His mate left her four little puppies, to join in the cause of her lord; and every coyote on the other side of the netting lined up and snapped and snarled and made faces in reply to the horrible growling and deep chested, hateful roars of the larger canine. Shag was furious, for before him was that one eared sniveler with the piece of tail still in his mouth. He especially hated that coyote, for he was the villain that only the day before had slaughtered one of Madam Shag's puppies, when the little fellow had inadvertently wabbled through the nettings.

Enraged beyond endurance, the big wolf sprang high, and then threw himself against the fence. To the surprise of the bystanders, of the coyotes, and perhaps more of himself, his legs stuck through the meshes, which were more open higher up, and he hung there. His hind legs immediately became the center of attraction for the coyotes, and they snapped and bit him cruelly. He drew them up and looked about him. He tried to free his front legs, and by working them one at a time he found himself climbing. He looked around him wonderingly, and then upward. He had solved the problem that had defied his wolfish brain for the three years of his imprisonment within those hateful wire walls, the problem that had kept that dreamy, vacant look in his pale eyes, as he used to lie motionless for hours, apparently seeing nothing.

One more effort, and he was teetering with his belly across the top of the fence, looking down upon the coyotes. They were not scrambling over each other now to reach him. Instead, they sneaked quickly about on low, crouching legs, with their tails out of sight, darting for this corner and that, and holding their cowardly eyes fixed upon the big gray figure above them.

Then the big wolf freed his hind legs, wabbled a moment, and fell into the coyote pen. One long growl of triumphant hate broke from him, as he arched his bristling neck and looked for that one eared coyote. A rush, a terrible chop, a few shakes, and it was over. He killed them all, six of them, and then he ran over and, in his delight, rubbed noses through the wire with his frantic mate.

But the cares of a father rest lightly upon a wolf at any time, and now Shag had other things to occupy his attention. Turning, and taking a flying leap, he again lighted on the fence, and began the repetition of his former exploit. Most of the bystanders scattered; but one man, with more courage than discretion, waited till the wolf reached the top, when he belabored him over his head with his umbrella. The brute growled wrathfully, but in spite of his punishment he did not retreat an inch. He rolled over the top, and fell with a heavy thump upon the outside railing. He contented himself with biting his tormentor twice on the part of him that was last in getting away; then the strangeness of his freedom impressed him, and he paused.

The thickets close by invited him; so he turned and slunk into the shadow of the hazel and poplar. He was no longer a captive, but a stalking, wary wolf, joying fiercely in his liberty. He slipped through the willows again, as he had done years before, during that first happy year of his life.

That night he stole out to the enclosure where the deer were kept. Hunger was urging him. But he found a dozen men patrolling the grounds, so he shrank sullenly back again.

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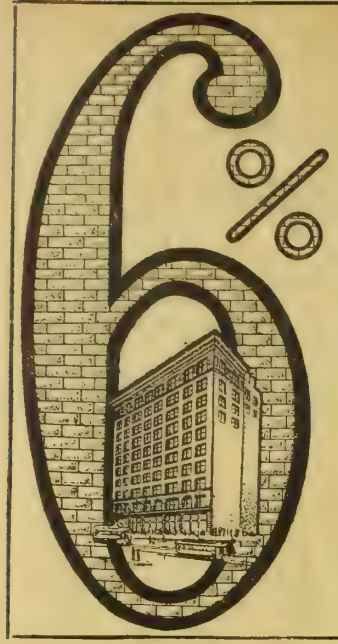

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Within him was an urgent longing to flee from the vicinity. A voice drifted out of the northward and called to him. He knew the direction. His animal senses and a hundred other signs all told him the way to the land of the maskeegs and jack pines, with silent, cool and shady retreats, carpeted with spongy moss. But across his path lay the city. He knew this by the sounds and smells that reached him with every breeze from the land of his birth.

All the remainder of the night he loped back and forth along the southern side of the city. Everywhere in his way were the habitations of men that he feared and yapping dogs that he hated. Nowhere could he find a place to break through. South of him ran the loop of the river; but he had no inclination to cross it. Northward was the call that spoke so strongly to his fierce, yearning heart, and he would obey.

When the light of early morning returned he stole back again and hid in the stretch of shrubbery between the park and the city. He was hungry, tired from his unusual exertions, and lame in the leg that had struck the railing in his fall. All day he lay, crouching at the sound of anyone approaching. No one molested him, however, and when kind darkness dropped down he came forth, a ravenous wolf bent on finding food. Urged by the gnawing pains of hunger, he skulked close to the buildings; but his attempts to kidnap dogs and cats were failures; and with the return of morning he was forced to skulk back to his old retreat. Now he was a more desperately ravenous wolf than before.

Early in the afternoon he heard sounds of men approaching. They seemed to be spread out to right and left, and were making a great noise. Every man now was a foe to Shag; so he slunk back farther for a new hiding place. His owners had sent men to beat the shrubbery; and the wolf now found that he was being driven back toward the park that he hated and feared. Suddenly one of the beaters was startled by a big gray shape, with an ominous growl emanating from it, that dashed past him through the willows. He fired immediately, for the orders were "dead or alive"; but his aim was poor.

Away through the friendly shelter dashed the fleeing wolf. In him was a great fear; for now he was hunted. Men and that detestable park pen were behind him; the city was before him. Beyond it, he knew, lay the land of his birth, of the jack pines and spruces and cool maskeegs; and they called to him. From the last clump of bushes he peered fearfully out at the city; then he dashed out, and fled down Lorne street, straight for the heart of it.

From behind him he heard a threatening rumble. The electric car was coming under all speed that the excited motorman could muster. But Shag ran for his life, or, what was dearer, his freedom, and he left the car behind. He fled past two dogs on the street, and instantly they were in yelping pursuit. More canines appeared every moment, and when the fugitive crossed the bridge spanning Clear Creek, after a half mile run, there were nearly a score of dogs in his wake.

Along the bank of the creek was a heavy fringe of willows. Shag dodged two astonished cyclists, several pedestrians and a delivery rig, and rushed into the sheltering willows. Some of the foremost of the dogs also went into the willows. Sounds of fierce fighting ensued, and when they came out again they were two less in number.

But a little crowd was quickly gathered, and when the wolf had recovered his wind he rushed out of the willows, crossed the asphalt pavement, jumped the opposite palings and slunk up along a row of evergreens adorning the grounds of a residence. There was a garden fete in session on the beautiful lawn, and the big gray fugitive went almost through the midst of the company. Without pausing to meditate on the consternation that he produced, he again took to the street. Soon there were dogs and more dogs after him, and he had to lope harder to keep ahead of even short legged terriers and squatty spaniels. He was not so terribly frightened now. His heart was becoming numb to such sensations. Anyway, none of the men or horses and drays or snorting automobiles had really hurt him. But that yelping rabble of dogs constantly following him was maddening.

Just ahead was Kennedy street, one of the main thoroughfares of the heart of the city. Across it, dodging an electric car, several rigs and an auto car, came the stream of canines, with the gray wolf in the lead. He was laboring hard; the stern race was telling on him. The chauffeur gave a shout, and, turning his machine, gave chase. In a few moments they were up with the wolf; but he turned in across the boulevards, and then sprang into a side lane, throwing off the men and most of the dogs. But two collies, keen and swift of foot, followed him, and, emboldened by the onslaught of a mongrel hound, they snapped at the wolf's rear. Some workmen near by ran across and with shout and gesture encouraged the dogs, and the fight was on. Once, and twice, the big wolf chopped and shook, and his enemies were two. A collie was as quickly put out of commission; then, to escape the missiles hurled at him, he put off again.

(To Be Continued Next Week.)

USEFUL HELPS IN THE KITCHEN.

A nice way to cook Irish potatoes so as to have them dry and mealy is to put them in a saucepan with just enough cold water to cover them, and let stand uncovered until the water becomes hot, then pour this water off and cover with cold water to which a little salt is added. In cooking prunes, the sweetness of the fruit itself is brought out by long, slow cooking, so that no sugar is necessary, and after washing and cleaning them thoroughly put in a kettle on the stove and allow three pints of water to each pint of prunes, and a slice of lemon added

before the prunes are quite cooked, is thought by many to be an improvement.

Put a pasteboard under and above the table when fastening the chopper or grinder on, and it will not slip or mark the table. Have a bag hanging near the kitchen table ready to receive small pieces of cotton cloth that are too small for other uses, as the clean, soft pieces can be used for wiping out nice dishes instead of scraping them with a knife, and use the small pieces for wiping the sides of the dishpan before you attempt to wash it, as the grease is hard to wash off and the pieces can be burned and the dish cloth can be kept clean twice as long.

Bread crumbs and pieces of bread dried in the oven and rolled fine can be placed in sealed jars and can be used for scalloped dishes, baked hash and in tomatoes and for thickening gravy.

When carving knives and forks and other nice steel knives are not to be used for some time, clean them well, and when perfectly dry, rub each blade with dry wood ashes; then wrap closely in thick brown paper and they will not rust for years.

To keep the inside of the coffee and teapot sweet and clean, boil borax water in them two or three times a week and place out in the sun and air for several hours. Glass and china can be kept bright and shining by washing through borax water without any soap, and then polishing with a soft cloth. The dish towels can be kept soft and white and will last twice as long if they are rinsed out in soda water after each meal and then boiled in strong borax suds twice a week. These suds soften and whiten the towels without any injury to the fabric, and when cleaned in this way they need very little rubbing, and it is the hard rubbing that wears them out much sooner than the using.—M. A. T.

PAPER BAG COOKERY.

The paper bag cookery, which has been the rage all over England for some time, has reached the United States and is taking the country by storm.

These bags were perfected by M. Soyer, a French chef, who experimented until he found a bag suitable in texture and strength and without any disagreeable features attendant upon the use of the ordinary paper bag.

These bags come in all sizes to suit different quantities of food. The bag is slightly greased on the inside and the meat or vegetable put in. Sufficient water to prevent burning or dryness is added unless one wishes a larger amount of liquid to serve with dish. The bag is then carefully sealed by folding over the mouth two or three times and fastening with paper clips. It is then laid on the grill or on a wire rack on the floor of the oven. The oven must have only moderate heat to insure best results.

M. Soyer has carefully worked out a time table for different meats and vegetables.

In serving, the bag is drawn carefully on the plate and then ripped open and discarded.

The claim made for these bags is that they not only do away with washing of greasy pans, but cooking in them preserves the natural flavor of the food. In vegetable cookery, this would mean a gain, as the valuable mineral matter which vegetables contain is thrown away in the stock.—Margaret H. Haggart, Colorado Agricultural College.

THE INEVITABLE TROUBLE.

I cannot run the old cars
I ran long years ago;
For they are so old-fashioned now,
And they're so awful slow,
I can't keep up to this year's pace,
They wouldn't stand the strain;
I cannot run the old cars,
Or take them out again.

I cannot run the old cars,
They aren't built just right;
The aspiration pipes get loose,
The carbureter tight.
The steering-gear declines to work,
The jump-spark will not play;
I cannot run the old cars,
They will not do today.

I cannot run the old cars,
They haven't any speed;
And all the fun is, nowadays,
The limit to exceed,
And so I have to stay at home,—
It makes me awful blue;
I cannot run the old cars,
And can't afford the new.

—Carolyn Wells in Harper's.

MOST UNKINDEST CUT.

With reference to the rumors of country "society" reporting, Mr. Melville Stone, of the Associated Press, tells of the account of a wedding published in a Kansas paper.

The story, which described the marriage in the usual flowery adjectives, concluded with this surprising announcement:

"The bridegroom's present to the bride was a handsome diamond brooch together with many other beautiful things in cut glass.

ABOUT THE HOUSE.

There are sometimes spots on the top of the stove that have become burned on so that the usual application of soap and water will not remove them. It is a good thing to keep a little emery paper on hand for this purpose, as a few rubs with a piece of it will soon remove them. It is also good for rust spots.

HIS CHOICE.

A boy went into a shop to buy a cent's worth of nuts. The man at the counter, a cheery, good-natured soul, said to him:

"You can have them—mixed if you like.

"All right," said the boy; "you may put one or two cocoanuts in, if you please."

HIS JUSTIFICATION.

"The trouble with you, Dobby," said Wilkins, "is that you bother too much over little things. It has become a habit with you."

"Well, it would become a habit with you, too, if you had a pair of three-months-old twins in the house," retorted Dobby.—Harper's Weekly.

FRATERNAL AFFECTION.

Recruiting Sergeant: Why do you say you won't enlist unless you're sent to the Seventy-fifth Infantry?

Tim Geoghegan: Beca'se I want to be near me brother that's in th' Seventy-sixt.'—Harper's Weekly.

A WOOLY TALE.

Mary had a little lamb.
She bought the "critter" cheap.
In five years she owned a farm,
Just through raising sheep.

—Chas. H. Meiers.

To keep the rug in place in front of the door, sew a brass ring on each of the corners nearest the door, and slip these over brass headed tacks that have been fastened to the floor where needed.

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WARNING—Look for the Mayer Trade Mark on the sole—if your dealer cannot supply you write to us

We make Honorbilt Shoes for men, women and children, including "Leading Lady" and "Special Merit" brands—also Mayer "Yerma Cushion" and Mayer "Martha Washington Comfort Shoes."

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Western Branch: Washington Shoe Mfg. Co., Seattle, Wash.

ALFALFA SEED

New crop seed, recleaned. *No Alfalfa Weevil* where this seed was grown. Samples and quotations on request.

BULB PLANTING is now in full swing and our second shipment of Holland Bulbs has arrived. It consists of Anemones, Ranunculus, Iris, etc. Ask for our Free Bulb Catalog containing full Cultural Directions for California. Our "Hints on Gardening" and Seed Catalog also mailed free on request.

Morris & Snow Seed Co.
425 So. Main Street, Los Angeles, Cal.

Four Routes East

SUNSET
Double Daily Service to New Orleans and East, through Dixie Land.

EL PASO
"GOLDEN STATE LIMITED"
The train de luxe, exclusively first class.
The "CALIFORNIAN" for both first and second class travel.
The line of low altitudes.

OGDEN
The trail of the Argonauts—
The route of the
SAN FRANCISCO
"OVERLAND LIMITED."

SHASTA
The "ROAD OF A THOUSAND WONDERS," to the East through the great Northwest.

SEE AGENTS

Southern Pacific

Los Angeles Offices
600 South Spring Street.
Arcade Station, Fifth and Central Ave.
Pasadena Office
148 East Colorado Street.

San Francisco-Los Angeles Produce Markets

Los Angeles Market

LOS ANGELES, Dec. 6, 1911.

Butter.

A two cent advance is noted in extras. Market firm.

Prices to trade 2½c in advance of the following Produce Exchange quotations:

Extras	33½
Firsts	31
Ladles	25
Country	23

Cheese.

Local Anchor	16
Oregon Daisy	17½@18
Northern Fresh	17½@18
Domestic Swiss	18
Imported Swiss	33

Eggs and Poultry.

Eastern eggs have taken a material advance. Local extras remain the same, with easy condition on market.

Buying prices f. o. b. Los Angeles are:

Local Ranch Candled	48
Case Count	44
Eastern	38
Eastern Storage	26@28
Pullets	26

Dealers pay for live poultry f. o. b.:

Hens, lb	12@15
Roosters	8
Broilers	21
Fryers	14
Roasters	14
Turkeys	18@20
Ducks	14
Geese	14
Guinea Hens, doz	4.00
Squabs, doz	1.75

Live Stock.

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs	6¾
Prime Steers	6
Heifers	6
Calves, lb	6½
Sheep, Ewes, head	4.75
Lambs, head	3.75@4.25
Wethers	5.00@5.60

Potatoes.

Wholesale prices are:

Sweets, Yellow, cental	2.00
Highlands, cental	1.60@1.85
Salinas	2.00@2.10
Lompoc	2.00@2.10
Oregons	2.10@2.25
Oregon Early Wonder	2.40@2.50

Onions.

Wholesale quotations:

Australian Brown, cental	1.75
Silverskins, sack	1.75@1.85
Yellow Danvers, cental	1.75
White Wax	1.60@1.75
Garlic	6@8

Vegetables.

Wholesale quotations:

Artichokes, Northern, doz	90@1.10
Beets, doz bunches	35
Bell Peppers, lb	6@7
Brussels Sprouts, lb	8@10
Beans, Limas	7@8
Beans, Green and Wax	7@8
Chilis, Green	4@6
Chilis, Red	15@16
Cucumbers, lugs	1.00@1.25
Cabbage, sack	75@85
Cabbage, Red, lb	3@3½
Cauliflower, doz	50@65
Celery, crate	3.50@4.00
Carrots, sack	90@1.00
Egg Plant	3@5
Horseradish, lb	13½
Onions, Green, doz bunches	15@20
Kohl-rabi, doz bunches	40
Leeks, doz	35@40
Lettuce, crate	90@1.10
Mushrooms, lb	50@1.00
Oyster Plant, lb	15@20
Okra	6@8
Peas, lb	5@7
Parsnips, doz bunches	45
Parsley, doz bunches	25@30
Turnips, sack	90@1.00
Radishes, doz bunches	15@20
Rhubarb, Crimson Winter	90@1.00
Spinach, doz	15@20
Squash, Summer	75@85
Spearmint, doz	25@30
Tomatoes, lug	75@85
Turnips, sack	1.00@1.25
Watercress, doz	35@40

Citrus Fruits.

New Navels	3.50@4.50
Valencias	4.50
Grapefruit	3.00@3.25
Limes, hundred	1.25
Lemons	2.75@3.00

Fresh Fruits.

Wholesale prices on the market are:

Alligator Pears, doz	6.00
Apples, Bellefleurs	95@1.25
Apples, Spitzenbergs	1.10@1.50
Apples, Pearmains	1.25
Apples, Jonathans	1.90@2.35
Bananas	4½
Casabas, crate	1.50@1.75
Christmas Melons, crate	1.75@2.00
Grapes, Thompson Seedless, lb	3
Grapes, Black Hamburg, lug	65
Grapes, Muscats	75@90
Grapes, Tokays	85@1.00
Grapes, Cornichon	1.10
Peaches, lug	1.50@1.75
Pineapples	10
Quinces, lug	1.00@1.10
Persimmons	1.00@1.25
Pomegranates, lug	75@1.25
Pears, Bartlett, lb	7
Blackberries	12½
Raspberries	10@12
Strawberries	12@15

Dried Fruits.

Wholesale prices to retailers are:

Evaporated Apples, fancy, lb	11@11½
Apricots	16@17
Figs, box	1.50@1.75
Peaches	11@12½
Nectarines	12
Pears	12@13
Prunes	7½@15
Plums	10

Beans, Dried.

Wholesale quotations:

Limas	6.50
Black Eyes	4.50@5.00
Pinks	3.85@4.00
Lady Washington	4.75
Small White	4.75
Garvanzas	4.50
Bayous	4.50@5.00
Lentils	6.00@7.00
Mexican Reds	4.75@5.00

Nuts.

Wholesale quotations:

No. 1 Soft Shell Walnuts	15@16
No. 1 Hard Shell Walnuts	13½
No. 2 Walnuts	11
Almonds, IXL, fancy, lb	22
Pecans, polished	15@17
Pecans, Eastern	8
Peanuts, California	5@5½
Pine Nuts	18

Honey.

Wholesale quotations:

Extracted Water White	8½
Extracted Light Amber	7½
Comb Water White	16@17
Light Amber	13@14
Beeswax	30

Hay.

Buying prices f. o. b. cars Los Angeles:

Barley Hay	14.00@16.00
Wheat Hay	14.00@15.00
Tame Oats	18.00@20.00
Alfalfa	13.00@14.50

Grain.

Wholesale selling price f. o. b. Los Angeles:

Wheat, new, cental	1.75@1.80
Corn	1.70@1.95
Kaffir Corn	1.80
Millet	3.75
Popcorn	4.75@5.00
Egyptian Corn	1.80
Red Oats	2.00
Seed Barley	1.50
Milo	1.95

Feed Stuff.

Wholesale selling price f. o. b. Los Angeles:

Alfalfa Meal	1.25
Beef Scrap	3.00
Bone Meal	2.05
Charcoal	1.95
Cracked Corn	2.00
Cracked Wheat	1.90
Shorts	1.85
Bran	1.60
Oil Cake Meal	2.65
Feed Meal	2.05
Rolled Barley	2.10
Rolled Oats	2.00
Middlings	1.85

The Oregon Dairymen's Association will hold its twentieth annual meeting at Portland, Dec. 7-8.

San Francisco Market

SAN FRANCISCO, Dec. 6, 1911.

Butter.

A weak situation prevails on the butter market, with a cent decline since Saturday. This leaves quotations exactly as last week.

Prices to trade 2½c in advance of the following Produce Exchange quotations:

California Extras, lb	31
Prime Firsts	28½
Firsts	27
Seconds	26
Storage Extra	28

Cheese.

California Flats	14@17
Cal. Young America, fy, new	15½@17
Oregon, fancy	15½

Eggs and Poultry.

Eggs dropped heavily the last of the week, but are now recovering, with a strong market.

Official quotations of the San Francisco Wholesale Dairy and Produce Exchange are:

Fresh Ranch Extras	47
Firsts	42
Select Pullets	42½
Storage Extras	28½
Hens	4.00@10.00
Fryers, doz	5.00@6.00
Ducks	4.00@8.00
Broilers	3.00@4.50
Roosters, doz	4.00@9.00
Geese	2.00@3.00
Goslings, pair	2.00@2.25
Pigeons	1.50@1.75
Turkeys	21@23
Squabs	2.00@3.00

Live Stock.

San Francisco prices, gross weight:

Steers	4@6
Cows and Heifers	3@4¾
Calves, lb	5½@6¾
Hogs	6½@6¾
Wethers, No. 1	3¾@4
Lambs	4½@5
Ewes, No. 1	3¼@3½

Potatoes.

Wholesale market quotations:

River Burbanks, cental	1.10@1.35
Alamedas	1.15@1.65
Sweets, cental	1.65@1.85
Salinas Burbanks	1.60@1.85

Onions.

Yellow, New	1.00@1.15
Garlic, new, lb	3@4

Vegetables.

Wholesale quotations:

Asparagus, box	1.00@1.75
Beans, String	5@7
Beans, Wax	2½@4
Limas	4@8
Bell Peppers, box	75@1.00
Cabbage, cental	50@1.00
Cauliflower, doz	40@60
Carrots	40@60
Cucumbers, box	75@1.25
Corn, sack	50@1.25
Chile, box	45@60
Celery, crate	2.00@2.50
Egg Plant, box	40@85
Lettuce, crate	75@2.00
Okra, box	65@1.00
Peas, lb	4@8
Hubbard Squash, sack	40@60
Summer Squash, lug	65@1.00
Squash, Marrowfat	40@60
Tomatoes, box	50@1.25
Turnips	60@75

Citrus Fruits.

Navels	2.00@3.25
Valencias	3.25@4.50
Grapefruit	2.00@3.75
Lemons	2.00@5.50
Limes, Mexican	4.50@5.00
Tangerines	1.15@2.35

Fresh Fruits.

Apples, Bellefleurs	75@1.10
Apples, Newtons	75@1.25
Apples, Spitzenberg	85@1.35
Figs, double box	1.25@1.50
Grapes, Muscat, lug	75@1.15
Grapes, Tokay	50@65
Pears, Winter, box	75@1.75
Persimmons	1.00@1.50
Pomegranates	1.25@2.00
Quinces, box	50@75
Strawberries	4.00@7.00
Pineapples, Hawaiian	3.00@3.50
Bananas	1.00@1.50

Dried Fruits.

FRUITS—1911 crop, f. o. b., carload lots, per lb: Apples, 8@9c; Apricots, 12½@15½c; Peaches, 9@10½c; Prunes, bulk basis, 6@7½c; per lb, 4¾@10c; Figs, 4¼@5½c for White; Pears, 9½@12½c.

RAISINS—1911 crop: Seeded, per pkg—Fancy, No. 16, 6¼c; Choice, No. 16, 6c; Loose Muscatels, in 50-lb boxes—Standard, 4-crown, 5¼c; 3-crown, 4¾c; 2-crown, 4¼c; Seedless Muscatels, 5½c; Sultanas, 6@6¼c; Thompsons, 7@7½c.

Nuts.

Walnuts, No. 1 Soft Shell	14
Walnuts, No. 1 Hard Shell	13½
Almonds, Nonp	18@18½
Almonds, I X L	17½
Pecans	14¼@14½
Chestnuts, California	9@11
Peanuts	3@5

Beans, Dried.

Limas	6.00@6.15
Pink	3.10@3.20
Black Eyes	3.80@4.00
Small White	4.10@4.15
Large White	4.05@4.15
Kidneys	5.00@5.15
Garbanzos	3.00@3.25
Bayou	3.65@3.85
Red Mexican	4.40@4.50
Horse Beans	2.75@3.00
Cranberry	4.00@4.15

Hops.

Hops, Coast, 1910	35@38
Hops, 1911	40@46
Hops, Oregon, 1911	40@46

Honey.

Water White, Comb, 1911	15@16
Dark Comb	12½
Extracted White, 1911	8½@9½
Extracted Dark	5@6
Beeswax, lb	24@30

Hay.

Scott, Magner & Miller say:

Arrivals of hay during the week have amounted to 2,200 tons. The lessening of arrivals has been due to the fact that consumers here apparently are not ready to pay the advanced prices, and also to the fact that the weather remaining dry in the country has caused an active demand from many of the interior sections.

Somewhat of the above arrivals have consisted of river alfalfa, which is now all practically taken care of, and there will be very little to come from the river districts from now on.

Market during the week has been strong. An advance has taken place in some of the medium types, and the entire line shows a strength that is thoroughly justified by the situation. We are now in the month of December, with no rain having fallen. There is no pasture in the country, and cattle, horses and sheep will have to be fed. Even if we have rain now, followed by the usual December frosts, feed cannot be expected to start satisfactorily. These conditions now being thoroughly understood have caused a hardened market with a strong tendency for advancing figures.

Trade in the city has been quiet. There is some demand for shipments along the coast, and we are now having considerable inquiry from many points.

Alfalfa has made a decided advance, due to country demand.

A little choice barley straw has come in during the week, and has sold at top figures.

No. 1 Wheat or Wh & Oat	16.00@17.50
No. 1 Wheat or Wh & Oat	16.00@18.00
No. 2 Wheat or Wh & Oat	13.00@14.50
Choice Tame	17.00@17.50
Other Tame Oat	12.00@15.00
Wild Oats	10.00@14.00
Stock Hay	7.00@8.00
Alfalfa	10.00@13.50
Straw, bale	60@70

Grain.

Wheat	1.47½@1.52½
Barley, fancy	1.77½
Barley, good to choice	1.75
Barley, poor to fair	1.70@1.72½
Corn	1.60@1.70
Oats, White	1.75@1.85
Rye	1.50@1.57½
Mustard, Brown	5½
Alfalfa Seed	17@18
Millet	2¾@3

Flaxseed	5@5½
Broom Corn Seed, ton	30.00

Feed Stuff.

Alfalfa Meal	15.00@17.00
Bran, ton	26.00@27.00
Feed Cornmeal, ton	38.00@39.00
Cracked Corn	38.00@39.00
Rolled Barley, ton	40.00@41.50
Rolled Oats, ton	37.00@38.00
Middlings	32.50@35.00
Oilcake Meal	42.00@43.50
Cocoanut Cake, ton	24.00@25.00
Mixed Feed, ton	25.00@27.00
Shorts	28.00@29.00

Deciduous Fruit Market

F. B. McKevitt, manager of the California Fruit Distributors reports:

Sacramento, Dec. 2, 1911.

The following gives number of cars of deciduous fruit shipped from all points in California for the week (7 days) ending Friday morning, Dec. 1, 1911:

Grapes—38 cars. Movement of this fruit during the week has been about as expected. While it shows a total of 38 cars, a considerable portion of these had moved out before our last letter was written, but appeared in subsequent reports received from the railway companies. It is believed that the shipment is now entirely completed, although there are probably a few cars which will yet appear in the railway reports. The last car of Emperors left Vacaville on the 28th and the same day closed the shipment of this variety at Mills.

This is the last report that will be issued by us during the present season. Reference to the table below, which has been brought up to date, will show the shipment so far as reported for the entire season. From this it will be seen that the movement has been much larger than last year when we consider that this season each car contains thirteen tons, whereas in 1910 the minimum was twelve tons. The season has been an erratic one, ranging from the highest prices ever known in the California fruit business, and which continued well into August, to the lowest general range in the history of the business. We believe the trade this year has been more generally unsatisfactory to shipper and dealer than any other of which we have knowledge. It is to be hoped that the same conditions will never again prevail. We are looking forward to a satisfactory crop of fruit in this state for the coming season bud development being all that could be desired.

Comparative Statement of Car Lot Shipments up to December 2.

	1910	1911
Cherries	250½	216¼
Apricots	289¾	214½
Peaches	2517¾	2027
Plums	1552½	1366
Pears	2361	2324¾
Grapes	4944½	6369½
Sundry	17	16¼
Total	11,933	12,534¼

Citrus Fruit Market

LOS ANGELES, Dec. 6, 1911.

Nicer holiday fruit never went out of California than has gone forward this year. The shipments will be almost entirely from north of Tehachapi, although Southern California has forwarded well up towards 150 cars. This for the South is about a third of last year's shipments at same date. The rain which is falling as we go to press will lessen, if not cut out entirely, any further Southern California shipments for the holiday trade. Tulare and Butte Counties' fruit is not only of good quality, but exceptionally satisfactory as to sizes. The tone of the lemon market is decidedly easy, as was expected at this time of the year.

Shipments.

Shipments of oranges from Southern California to date since Nov. 1, 161 cars; lemons, 501; total, 662. To same date last season: Oranges, 733 cars; lemons, 499; total, 1,232. Tulare County shipments we have no report of since Dec. 1. Up to the night of that day the total was 1,305 cars of oranges; lemons, 53; total, 1,358. To same date last season, 1,554 cars of oranges; lemons, 53; total, 1,607. Butte County's total to same date was 183 cars of oranges. To same date, 1910, 271 cars oranges.

LOS ANGELES, Dec. 4.—Three cars navels and three cars lemons sold.

United, fy. or.. navels, Orange, Dec. 2 to Kansas City	$1.75
Dulce, sd, navels, Orange, Dec. 2 to Kansas City	1.30
Lone Palm, fy, or, navels, Santa Ana, Dec. 2, to Kansas City	1.72½
Beach, sd, navels, Santa Ana, Dec. 2 to Kansas City	1.42½
United, fy, or, navels Orange, Nov. 30, to Kansas City	1.65
Naralimo, fy, lemons, Lamanda Park, Nov. 28, Chicago	2.25
Circus, ch, lemons, Lamanda Park, Nov. 28, Chicago	2.00
Clown, fy, lemons, Glendale, Nov. 28, SL. DRG	1.95
Lotengo fy, lemons, Corona, Nov. 29, Pittsburg	2.20
Crackshot, ch, lemons, Corona, Nov. 29, Pittsburg	1.95
Del Oro, sd, lemons, Corona, Nov. 29, Pittsburg	1.70

NEW YORK, Dec. 4.—Four cars navels, three cars Valencias, one car Arizona navels and eight cars lemons sold. The market on well-colored navels is strong, fair-colored navels doing well. Fancy Valencias higher, poorer grades considerably lower. The market is lower on lemons. Weather fair, preceded by snowstorm.

Navels.

	Avge.
Golden Locket	$2.40
Hollywreath, fy, O'Neill Ft. Co.	2.70
Watchumna, C. C. Ex.	3.80
Watchumna	3.50
Golden State, C. C. Ex.	3.65

Valencias.

Naralimo, Sparr Ft. Co.	4.40
Circus, Sparr Ft. Co.	2.95
Naralimo, Sparr Ft. Co.	4.10
Circus, Sparr Ft. Co.	2.85
Plain, Sparr Ft. Co.	2.50
Old Mission, fy, Chapman	10.35
Old Mission, ch, Chapman	7.80
Golden Eagle, sd, Chapman	5.00
Lady Rowena, Chapman	3.25

Arizona Navels.

Desert Brand	$5.30
Tonta Brand	3.75

Half Boxes—Arizona Navels.

Desert	$3.35
Cactus	2.35

Lemons.

Independent, fancy	$3.60
Choice	3.15
Poinsetta	3.40
Excelsior	3.00
Sunrise	2.85
Pet	3.65

PHILADELPHIA, Dec. 4.—Two cars lemons sold, also seventeen cars Florida oranges and grape fruit. Florida oranges sold from $1.90 to $3.50 per box, averaging $2.10; Grape fruit sold from $2.35 to $5.25; average, $4.25.

	Avge.
Quail, O. K. Ex.	$3.50
Euclid, or, Growers Ft. Co.	3.15
Plain, Growers Ft. Co.	2.35

ST. LOUIS, Dec. 4.—Clear, cold. Market steady. Four cars sold.

Navels.

	Avge.
Paul and Virginia, Cen. Cal. Ex.	$2.75
Red Label, Cen. Cal. Ex.	2.60
Red Label, Cen. Cal. Ex.	2.65
Wholesome, Cen. Cal. Ex.	2.55

Lemons.

Whittier, S. T. Whittier	$2.85
Grenleaf, S. T. Whittier	1.95
Pico, S. T. Whittier	2.60

BOSTON, Dec. 4.—Four cars sold. Cold ,cloudy. Market easier.

Lemons.

	Avge.
Tunnel, S. T. Fernando	$2.95
Quail, O. K. Ex.	3.40
Urchin, S. T. Fernando	2.65
Squirrel, A.H. Arl.	3.55
Pet, S.A. Ex.	3.55

CLEVELAND, Dec. 4.—One car navels, and one car lemons sold. Market strong on navels, declining on lemons.

Lemons.

	Avge.
Pet, S.A. Ex.	$3.65
Pup, S. A. Ex.	2.10

Navels.

Forget-me-not, T.C.C. Ex. Ponca	$3.50

CINCINNATI, Dec. 4.—Cold. Market declining on lemons. Market steady on Floridas. One car lemons, six cars Floridas sold. Floridas, $1.60 to $2.35.

PITTSBURG, Dec. 4.—Five cars sold. Market easier on navels, unchanged on lemons. Cold.

Order Christmas Gifts

—from McStay at Wholesale Prices

Let Us Be Your

Santa Claus

and not only save you all the worry and trouble of Christmas shopping, but also save you money on all your purchases.

Notice

For the convenience of our customers during this month we place at your disposal our efficient corps of shoppers who will buy for you anything you may want in the way of dry goods, toys and presents that are not carried by us.

Send us your orders and we will give you the benefit of our buying capacity and experience.

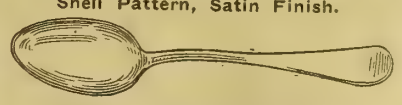
A Few Suggestions

—in beautiful and appropriate gifts at prices you can't resist.

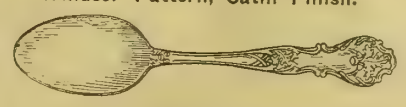
ROGERS BROS. SILVERWARE.

This ware needs no comment on our part, as it is to be found in nearly every home. The name of Rogers Brothers has been a household word for over fifty years. The following pictures show the different patterns to be had in this ware.

Shell Pattern, Satin Finish.

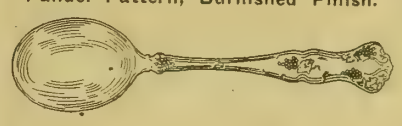


Windsor Pattern, Satin Finish.



Charter Oak Pattern, French Grey Finish.

Fanuel Pattern, Burnished Finish.



Vintage Pattern, French Grey Finish.

In ordering be sure and mention pattern wanted.

Tea Spoons, doz....$3.25; ½ doz.$1.75
Dessert Spoons, doz.. 5.25; ½ doz. 2.75
Table Spoons, doz... 6.25; ½ doz. 3.25
Coffee Spoons, doz.. 3.40; ½ doz. 1.85
Soup Spoons, round bowl, doz... 6.25; ½ doz. 3.25

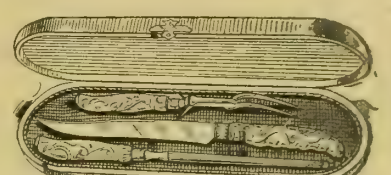
Knives and Forks—A set of knives and forks contain six knives and six forks packed in satin lined box.

Medium Knives and Forks—Plain pattern, satin or burnished, set $4.85
Dessert Knives and Forks—Plain pattern, satin or burnished, set 4.85
Medium Knives and Forks—Charter Oak, Fanuel or Vintage pattern, set 10.65
Dessert Knives and Forks—Charter Oak, Fanuel or Vintage pattern, set 10.65
Sugar Tongs—4½-in. fancy, one in satin lined box..... 1.10
Sugar Shell—6-in., fancy, one in satin lined box..... .80
Orange Spoons—5¾-in., fancy, half doz. in satin lined box.. 2.15
Berry Spoons—8¾-in., each in a satin lined box 1.55
Butter Knife and Sugar Shell in fancy satin lined box..... 1.35

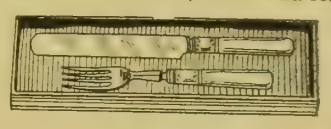
Punch Ladle—Vintage pattern, 15-in., in fancy satin lined box....$3.95
Gravy Ladle—7-in., in fancy satin lined box $1.10
Fruit Knives—6½-in., in satin lined box, ½ doz. $4.60
Butter Spreaders—6-in., ½ doz. in satin lined box..... $3.05
Bouillon Spoons—5-in., ½ dozen in satin lined box..... $3.25
Butter Knives—7¼-in., one in satin lined box $0.80
Cake Fork—7¾-in., one in satin lined box, Vintage pattern..... $0.95
Pie Knives—9½-in., one in satin lined box, Vintage pattern..... $1.80
Pie Service—9¾-in., one in satin lined box. Vintage pattern..... $1.95
Child's Set—Knife, fork and spoon in satin lined box..... $1.45

CARVER SETS.

No. 7833—Three piece, knive, fork and steel. Fancy ebony antique handle, 9-in. blade, sterling silver mounted and put up in fancy silk lined oval kid case. A handsome set, that retails for $15.00 to $20.00.



No. 7833—Per set..... $9.95
No. 8933—Three piece set with 3⅝-in. select pearl handle, 8-in. blade, sterling silver mountings, put up in fancy silk lined, oval kid case. Retails for $20.00 to $25.00.
No. 8933—Per set..... $14.65
No. 3633—Three piece set, fancy select genuine stag handle, 9-in. blade, sterling silver mountings. Put up in fancy silk lined oval kid case. Retails for $25.00.
No. 3633—Per set..... $15.95
No. 0041—Child's Set, Knife and fork



with 2⅛-in. pearl handle, sterling silver ferrule, straight swaged blade and four tine fork. Triple silver plate. Packed in satin lined box. Retails $3.50.
No. 0041—Per set $2.35

Our Terms Are

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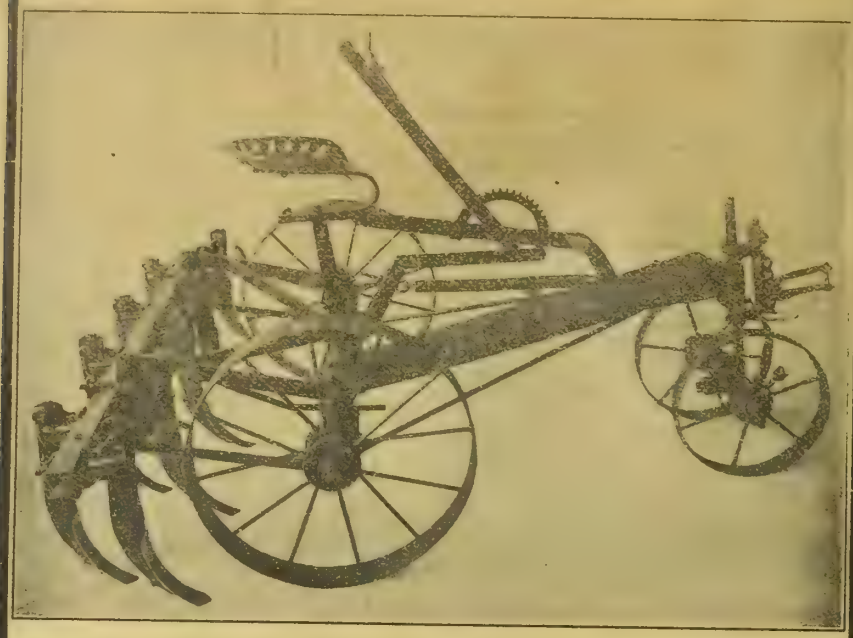
The Arnott Improved Orchard Cultivator



WE are pleased to be able to announce that prompt shipments can now be made of the **New Arnott Cultivator** as shown above. This has been for years the most popular cultivator in the Southwest and with the **New Fore Truck** it is way in advance of any other orchard tool.

Sold by Leading Dealers everywhere, or write us direct if your Dealer cannot Supply you.

ARNOTT & CO.

EXCLUSIVE MANUFACTURERS

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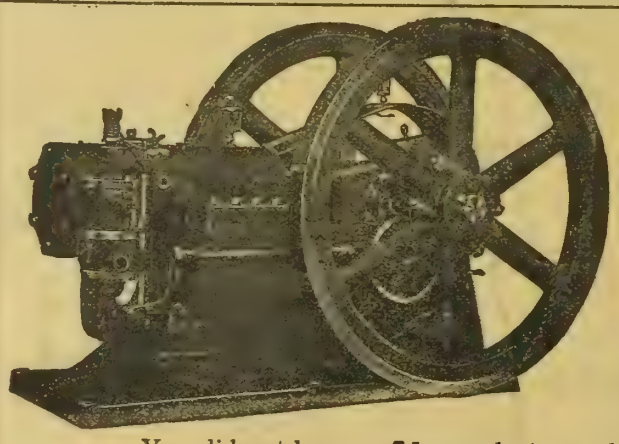

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943-945 North Main Street
LOS ANGELES CALIFORNIA

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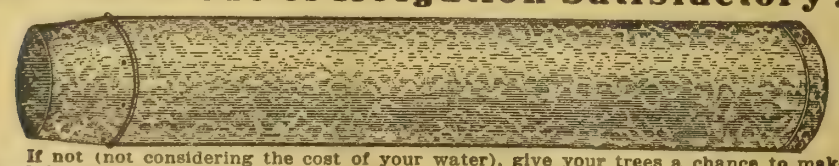

If not (not considering the cost of your water), give your trees a chance to make good by giving your orchard the proper amount of water all over same, and not three-quarters of your water supply within forty feet of your head flume.

The surface irrigating pipe we manufacture will remove this obstacle—will cut your water bill—is more convenient to use and will last a life time.

Write us, stating your requirements and we will cheerfully furnish you with prices and information desired.

We also manufacture Ells, Tees and Gates for this special pipe and are in a position to manufacture any special fittings you may require.

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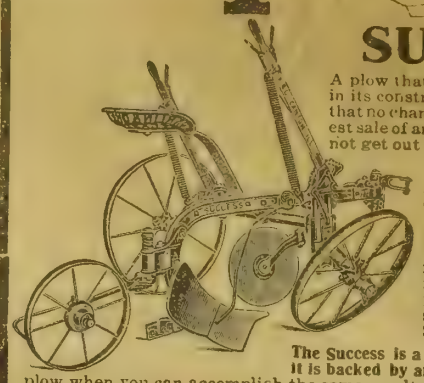
P & O



SUCCESS PLOWS

A plow that has been on the market for years without a change in its construction; a plow that was so well built at the start that no changes have been necessary; a plow that has the largest sale of any riding plow made; a plow that is so simple it cannot get out of order, so strong that it lasts a lifetime—

Such is The Success.

It has the strongest and simplest frame ever put on a riding plow; the best hitch, the best landing device, the best rolling cutter, and bottoms ever made. It has but two levers, but they give the same wide range of adjustments as plows with three or four levers The **Success** is heavier; it has more material, but fewer parts, and therefore less complicated, than others. That is why it is simple, strong and durable. That is why we call it the **Success.**

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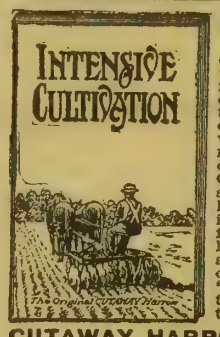
Always dependable—never disappoints. The one Ready Roofing that is right for any building. Made in three weights. Meets every roofing requirement. First cost the only cost. Needs no paint or repairs. Lasts for years. Handy rolls—108 square feet. Everything necessary for laying—nails, cement, etc—in core of each roll. Anyone can lay it. Let us send you samples—and our 32-page Roofing Booklet.

PIONEER PAPER CO., Los Angeles, Cal.

Address Department 11 Pioneer Roofing is for sale by Leading Dealers in building materials everywhere.



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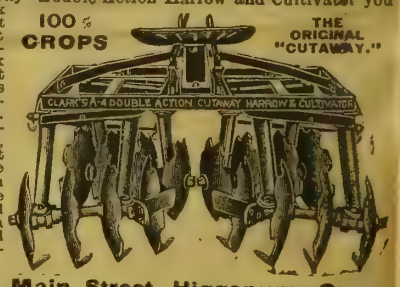
With Clark's Original "Cutaway" Double Action Harrow and Cultivator you can do more different kinds of work with less effort than any other. It is the only Disk Cultivator that completely embodies the double action principle. It will do the work of several other disk machines that would cost you several times as much; do it more thoroughly, because it has 4 gangs instead of 2. Cuts the soil twice, throws in opposite directions, fills the hollows, leaves land level and true. The draft is always from the centre—suitable for light team. All single action harrows run in half lap. Gang frame adjustable for cultivating rowed crops. Jointed pole. We make a "Cutaway" for every crop. Send today for our new catalogue, "Intensive Cultivation." It's Free.



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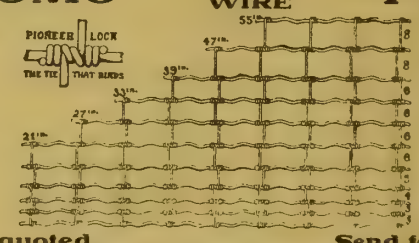
Farm and Poultry Fence and Gates
Barbed Wire
Staples



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Prices gladly quoted **Send for catalogue**

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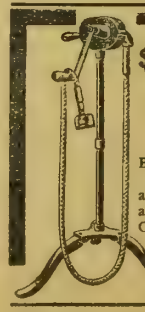

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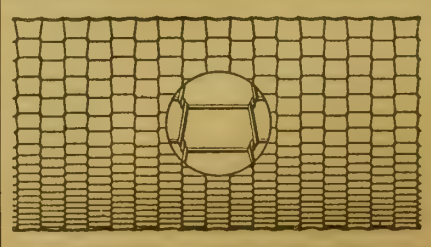

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Best and cheapest carried by leading dealers in all towns, or address

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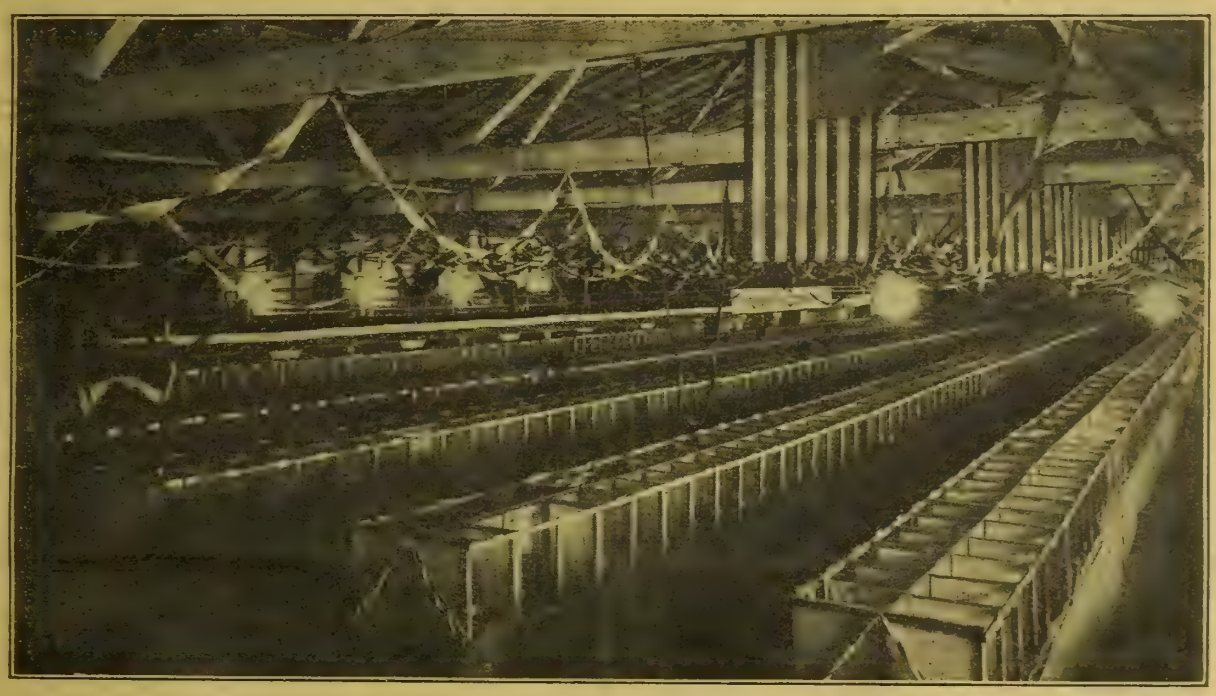
CALIFORNIA CULTIVATOR

An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch.

LOS ANGELES DECEMBER 14, 1911 SAN FRANCISCO

A Poultry Show in the White Leghorn City



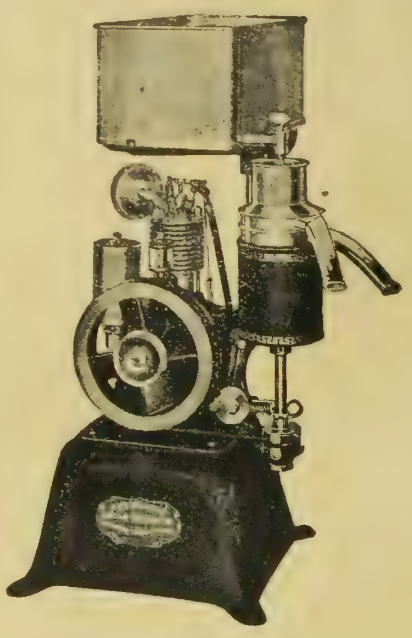
PETALUMA.

Petaluma, in Sonoma County, California, has a population of 10,000, is situated only 37 miles north of San Francisco at the head of navigation on Petaluma River, on the line of the Northwestern Pacific Railway, and is the terminus of the Petaluma and Santa Rosa Electric Railway, extending northward to Sebastopol, Santa Rosa and Forestville, reached by two steamers daily to and from San Francisco. It is the greatest poultry center on earth. It markets 100,000,000 eggs in one year. Hundreds of poultry ranches dot the surrounding country. They range from 2 to 160 acres. An average of 400 hens can be kept on an acre.

The Petaluma River ranks second among the navigable streams of the state. The imports and exports by river and rail for 1910 amounted to 400,000 tons at a value of about $20,000,000.

The Automatic Cream Separator

Crankless and Gearless



Nothing like it has ever before been invented. One size machine for any size dairy. The drudgery of dairying now a thing of the past.

It separates the milk perfectly faster than ten men can milk it.

Start the separator when the milking begins and it being both automatic and continuous in its operation, when the farmer is through milking he is through skimming.

Speed of bowl brought up in 15 seconds and will run for hours without the slightest variation.

It is destined to revolutionize the dairy business.

We are at least FIVE YEARS ahead of all competitors.

The Greatest Labor-Saving Machine of the Twentieth Century

NOTE: The AUTOMATIC Separator has been in use several weeks at the University of Illinois, Champaign, Ill., also the University of Ohio, Columbus, Ohio, where it amazed the faculty and surprised the students taking the Dairy Course, by its simplicity of construction, superior work and ease of operation.

Standard Separator Co., Milwaukee, Wis. Ottawa, Kans.

Gentlemen:—

We have just completed a thorough test of your AUTOMATIC Cream Separator and are pleased to report the following results:

FIRST TEST:

Temperature milk	74 deg.
Cream test	34%
Skimmilk	.005

SECOND TEST:

Temperature of milk	74 deg.
Cream test	52%
Skimmilk	.02
Indicated capacity	738 lbs.

All the tests were made by the Ottawa Condensing Company. Considering the fact that the milk was a mixture of the night's and morning's milk and the temperature low, we consider the foregoing results remarkable and indicating a very high efficiency in your machine.

Yours respectfully,
(Signed) H. B. CROSSGROVE.

ARNOTT QUALITY GUARANTEED ARNOTT & CO. INC. 112-118 So. LOS ANGELES ST., LOS ANGELES, CALIF. ARNOTT QUALITY GUARANTEED

Smyrna Park Nurseries

CAMPIN & MOFFIT, Prop's **CERES, CAL.**

We wish to announce that we have one of the largest and best *stock* of trees in the State, of

Pear
Peach
Plum
Apple
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—and all other varieties of *Deciduous Trees*.

Thanking our friends for their past favors and soliciting your orders for the same kind of trees we have furnished you before.

We are sincerely yours—

Smyrna Park Nurseries

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We make a specialty of growing the genuine Gravenstein apple tree

The variety that is making Sonoma County famous. Also other leading varieties of apples. They are thrifty, matured, hardy and well rooted. Are my own grown, grafted and budded from bearing trees of the best strain, and guaranteed true to name.

Also a good stock of cherries, plums, peaches, and other fruit trees; roses, palms, and other ornamental stock.

Send for price list.

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Complete Pumping Plants

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H. U. Roeding & Co. **Engineers and Contractors Foxcroft Bldg., San Francisco**

Citrus Trees

First Quality Trees will be Scarce in 1912

A block of 20,000, one year old buds. First Quality Trees. Free from scale— (no scrubbing) ***mostly 5/8 and up now***

THE MAN WHO WAITS is generally the disappointed man.

BUY NOW, WHILE THE GOOD STOCK IS AVAILABLE. It will cost you no more and probably less than if you wait until Spring.

THE BEST ARE CHEAPEST. First-class groves have never been made out of sickly seedling trees. That few cents per tree saved at time of purchase often shows dollars per tree loss in after years.

BUY THE BEST; IT PAYS. We have got a limited number of trees to offer for the season of 1912—

Eureka and Villa Franca Lemons. Washington Navels.
Valencias and Marsh Seedless Grape Fruit.

Ninety per cent of our trees are strictly first-class, strong, one-year-old buds, the majority of which will measure 5/8 inch and up now on sour stock roots. True to Name, and the buds of which were carefully selected from the best fruiting trees. They have been carefully grown, are straight and entirely free from scale (no scrubbing). We invite inspection and solicit correspondence.

We will sell these trees at current prices. Expenses refunded to out-of-town purchasers. Twenty years' experience in expert citrus horticultural work.

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California Cultivator

Vol. XXXVII. No. 24. LOS ANGELES: THURSDAY, DECEMBER 14, 1911 One Dollar the Year

The Annual Poultry Show at Petaluma

Petaluma's Prize Poultry Proudly Preens. Pleased People Praise Pampered Pets of Poultrydom

There is no city or section of California that so specializes upon one product as does Petaluma on Poultry.

Men are not long in discovering where Nature has her preferment for the production of certain commodities, and the early settlers soon determined that Sonoma County and particularly that part of it which adjoins the present City of Petaluma, was a place where poultry would thrive in a manner to bring home the golden harvest in bountiful measure.

Climatic conditions are favorable. Fogs do not carry their depressing influence; rains do not flood the land, and winds do not blow destructively. The soil is a sandy loam. This at the outset gives ample opportunity for the scratching proclivities of poultry. The rolling country furnishes ample drainage and makes an ideal section for poultry raising.

Aside from these the transportation facilities to the greatest egg and chicken market in California are so perfect that freight rates are reduced to a minimum. It is but natural then to expect that Petaluma, so favored by the elements of success, should grow and prosper. It is but natural also for a degree of perfection which can only come from quantity under the most auspicious environments.

Each year Petaluma shows to the world the best of her feathered tribe, and he who has formed ever so high an expectancy is not disappointed.

The practical men of Petaluma, and there are many of them, realize that criticism will be severe where so much is looked for. They recognize that in their show is found a model for other similar exhibitions throughout the state. They are equal to the occasion. At the hour for the judging to begin, which was the day before the show opeend, every pen had its occupant, every table had been built, every yard of bunting was in place, every light had been tested; all was ready.

Much credit should be given the management for the excellent business organization, which a mere casual observer could see, was back of the show.

The photograph on the cover of this issue gives a general idea of the arrangement and illustrates the proper method of display. Every bird could be seen and appreciated in full measure. Every aisle was ample for the accommodation of the vast throng that attended. The lighting facilities were perfect both day and night. In short, the entire arrangement showed much forethought and painstaking effort to present a show which would be long remembered as the epitome of perfection as to quantity, quality and the method of display.

To enumerate the excellencies of the birds and point out specific superiority would be to traffic with the possibility of omitting well-deserved praise, and we deem it best to publish the awards as made by judges R. J. Venn and H. H. Collier, and ask the indulgence of our readers in not commenting upon individual displays.

The following is a list of the awards:

AMERICANS.

Barred Plymouth Rocks—Pen, 1, K. P. Sabin; 2, B. S. Kennedy; 3, Thos. A. Atkinson; ck, 1, L. N. Cobbledick; 2, E. P. Sabin; 3, Mrs. Cecelia Felt; ckl, 1, L. N. Cobbledick; 2, 3, E. P. Sabin; 4, L. N. Cobbledick; hen, 1, 2, E. P. Sabin; 3, L. N. Cobbledick; 4, E. P. Sabin; pullet, 1, E. P. Sabin; 2, 3, 4, Jas. M. Montgomery.

White Plymouth Rocks—Pen, 1, Thos. A. Atkinson; ck, 1, J. Fahrenkrog; ck, 2, Carl Gregory; 4, J. Fahrenkrog; 4, Carl Gregory; ckl, 1, John Heetebry; hen, 1, Carl Gregory; 2, 3, J. Fahrenkrog; 4, Carl Gregory; pullet, 1, Carl Gregory; 2, John Heetebry; 3, Carl Gregory.

Partridge Plymouth Rocks—All awards, Robert V. Moore.

White Wyandottes—Pen, 1, Marshal Black Farm; 2, 3, A. L. Jenkins; 4, Marshal Black Farm; ck, 1, A. L. Jenkins; 2, Marshal Black Farm; 3, A. L. Jenkins; 4, Marshal Black Farm; ckl, 1, Marshal Black Farm; ckl, 1, Marshal Black Farm; 2, 3, A. L. Jenkins; 4, Marshal Black Farm; hen, 1, Marshal Black Farm; 2, 3, 4, A. L. Jenkins; pullet, 1, 2, A. L. Jenkins; 3, Marshal Black Farm; 4, A. L. Jenkins.

Where the White Leghorn City Gets ts Name.

Buff Wyandottes—All awards, J. Stansfield.

Black Wyandottes—All awards, J. Stansfield.

Silver Penciled Wyandottes—All awards, J. Stansfield.

Silver Laced Wyandottes—All awards, J. Stansfield.

Columbian Wyandottes—All awards, Schmidt & Gunther.

S. C. Rhode Island Reds—Pen, 1, W. E. Gibson; 2, Jack Lee; 3, Chas. S. Wakefield; 4, B. S. Kennedy; ck, 1, 2, W. E. Gibson; 3, 4, Wm. W. Hirsch; ckl, 1, Wm. W. Hirsch; 2, 3, W. E. Gibson; 4, Jack Lee; hen, 1, 3, Wm. W. Hirsch; 2, Jack Lee; 4, W. E. Gibson; pullet, 1, W. E. Gibson; 2, 3, Wm. W. Hirsch; 4, J. W. Bauer.

R. C. Rhode Island Reds—Pen, 1, ck, 1, 3, Jack Lee; 2, Wm. W. Hirsch; ckl, 1, W. E. Gibson; 2, Jack Lee; hen, 1, W. E. Gibson; 2, 3, Wm. W. Hirsch; 4, Jack Lee; pullet, 1, W. E. Gibson; 2, 4, Jack Lee; 3, Wm. W. Hirsch. **Buckeyes**—All awards, Wm. W. Hirsch.

ASIATICS.

Black Langshans—All awards, M. W. Nicholson.

Buff Cochins—All awards, Mrs. C. Du Jardin.

Light Brahmas—Pen, 1, Carl Gregory; ck, 1, A. L. Jenkins; 2, Carl Gregory; ckl, Carl Gregory; 2, W. J. Collis; 3, Mrs. C. Du Jardin; hen, 1, A. L. Jenkins; 2, 3, Carl Gregory; pullet, 1, Carl Gregory; 2, 4, Mrs. C. Du Jardin; 3, W. J. Collis.

MEDITERRANEANS.

S. C. White Leghorns—Pen, 1, 2, N. Duttbernd; 3, E. Royal Everett; 4, Arthur Schroeder; ck, 1, 2, N. Duttbernd; 3, 4, Carl Gregory; ckl, 1, 2, N. Duttbernd; 3, 4, W. R. Thomas; hen, 1, 2, 3, N. Duttbernd; 4, Carl Gregory; pullet, 1, 2, 3, N. Duttbernd; 4, E. Royal Everett.

Buff Leghorns—Pen, 1, Herbert Peck; 2, Guy Johnson; 3, R. J. Mott; ck, 1, Guy Johnson; 2, Herbert Peck; ckl, 1, 3, Carl Gregory; 2, Guy Johnson; 4, Herbert Peck; hen, 1, Dr. Stuart Peoples; 2, Guy Johnson; pullet, 1, Dr. Stuart Peoples; 2, 3, Carl Gregory; 4, Guy Johnson.

Black Leghorns—All awards, Carl Gregory.

Silver Duckwing Leghorns—All awards, A. Bailey & Son.

S. C. Brown Leghorns—All awards, Mrs. Wm. Bond.

Black Minorcas—Pen, 1, J. P. McDonough; 2, Percy White; ck, 1, 2, J. M. McDonough; 3, Herbert Peck; ckl, 1, 2, 3, J. P. McDonough; 4, Percy White; hen, 1, 3, 4, J. P. McDonough; 2, W. A. Tough; pullet, 1, 2, 3, J. P. McDonough; 4, W. A. Tough.

White Minorcas—Pen, 1, H. C. Scrutton; ck, 1, 2, L. N. Cobbledick; ckl, 1, Herbert Peck; hen, 1, 3, H. C. Scrutton; 2, L. N. Cobbledick; 4, Nipon Poultry Farm; pullet 1, L. N. Cobbledick; 2, 3, Herbert Peck; 4, H. C. Scrutton.

(Continued on Page 625.)

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Until you have seen the 1912

DUROCAR

The strongest and easiest riding car in the world

Made in Los Angeles by experienced men who understand the conditions of climate, mountains and desert.

4 and 5 Passenger, 35 H. P., $2,000 fully equipped
6 " 7 " " " " " $2,500 " "

Call at our factory and see them made.
1912 catalog sent on request.

Durocar Mfg. Co.

935 So. Los Angeles St. LOS ANGELES, CAL.

CITRUS Trees

For the convenience of many of our patrons, we have established a Los Angeles depot where we will carry a full line of our own citrus trees, as well as a complete assortment of deciduous fruit and ornamental stock from the Fancher Creek Nurseries of Fresno. We invite your inspection and inquiries.

ORANGES — Washington Navel, Thompson's Improved, Valencia Late, etc.

LEMONS — Eureka, Lisbon, Villa Franca, etc.

LIMES POMELOS CITRON

Our citrus stock is grown under ideal soil and climatic conditions in ournurseries at Whittier, Los Angeles county, and Exeter, Tulare county. Guaranteed True to Name. Sturdy, well matured, with excellent roots. Free fromscale. Call or write for Catalogue and Prices.

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Take Watts local to Washington St. or Hooper Avenue (yellow) *car to Washington Street and walk 2 blocks east.*

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1607 E. Washington St. Los Angeles, Cal.

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We are prepared to furnish Nitrate of Soda at the lowest market price, and will be pleased to quote prices and furnish literature to anyone interested, on application.

Dr. R. R. Snowden will at our expense, advise our customers as to how to use the fertilizers for the best returns, even if the soil has to be analyzed to do so.

State what crops you are interested in, and mention the CULTIVATOR.

Nitrate Agencies Co.

W. S. SPARR, Agent 321 Stimson Bldg., Los Angeles, Cal.

Citrus Trees

EUREKA LEMONS VALENCIAS WASHINGTON NAVELS

——Clean Sturdy Trees——

John M. Carse

TELEPHONE Home 401

121 No. Wilson Avenue ALHAMBRA

Citrus Trees for Spring Planting

For 1912

9000 Late Valencias 5000 Washington Navels
11000 Eureka Lemons

The trees are yearling buds on Florida Sour Stock, of thrifty growth and free from scale.

O. HANDY, Phone 33 Y 2 1-2 Miles N. E. of Plaza ORANGE, CALIFORNIA.

Orange and Lemon Trees

Fifty Thousand High Grade Trees

SMITH AND CLARK COMPANY

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Citrus and Tropical Fruits

NATIONAL QUARANTINE LAW.

By Prof. A. J. Cook, State Commissioner of Horticulture.

One of the most important necessary measures to come before the next session of congress is the national quarantine law. The first bill advocating this measure was introduced in the year 1897 unsuccessfully. This was followed by another attempt in 1899, and still another in 1907, the opposition in every case being stronger than the support. The last measure was opposed because it contained the following regulations: 1. That all introduced stock should be inspected at the port of entry, rather than at the port of destination. 2. That districts known to be infested with fungoid diseases and insect pests not known to exist in this country be strictly quarantined, and all stock from these localities prohibited.

The first point was changed to suit the American Association of Nurserymen so as to make the inspection of imported nursery stock at the port of destination rather than at the port of entry. While this reading of the law may save considerable to the nurserymen who are heavy importers of foreign stock and those interested merely in the importation of cheap plants, yet it is a point open to very serious objections. According to the ruling a shipment of trees from Hawaii, or any plants carrying the Mediterranean fruit fly, and destined to some interior town in California could not be inspected at San Francisco, the point of entry, but must first go to its destination and if found infested destroyed there. In this case, it is very possible to have distributed the fruit fly from San Francisco throughout the country through which the railroads pass, while if the inspection was made at the port of entry, and the infested shipment destroyed, the danger of infestation en route to its final destination, would be impossible.

Similarly a shipment to California from Europe—say of brown-tail moth—by way of New York, would not be inspected until it reached California, which would give ample time for eggs, larvae or pupae to develop and escape en route before it arrived in our state. If the shipment was then found infested, the destruction of property would come only after the heavy expense of shipping the stock entirely across the continent. This would certainly not benefit the nurseryman making the shipment. This latter case is not exceptional, for we have frequent shipments from France and are in constant danger of importing the Brown-tail and Gypsy moths. Such procedure will do away with our strict quarantine service at San Francisco, and certainly make the introduction of the Mediterranean fruit fly and orange maggot much easier than it now is. While this point is objectionable in itself for the above reason, it is greatly dependent upon the next point, which places a strict quarantine on districts known to be infested with such disastrous pests.

The leading entomologists of the country are emphatically set against any opposition regarding the establishment of quarantine districts as referred to above.

When we stop to consider that fifty per cent of all our injurious pests are from foreign countries and that this fifty per cent includes such insects as the Hessian Fly, Codling Moth, San Jose Scale, Gypsy and Brown-tail Moths, Cottony Cushion Scale, Cotton Boll Weevil, the Alfalfa Weevil, and many other important pests, and that the annual cost for fighting injurious insects in the United States reaches $1,000,000,000, we get some idea of the value of keeping out those pests that are now knocking at our very door.

Besides the dreaded insects named above which are seeking some means of entry we must include two fungoid diseases, the Potato Wart and the White Pine Blister Rust. The former is as close as Newfoundland, and is so serious a pest that it almost entirely wipes out the potato industry without any apparent means of control. The White Pine Blister Rust attacks the young pine seedlings and greatly impairs the building up of national forests. From a commercial standpoint this is as much to be dreaded as the Potato Wart.

During all of the past years of national quarantine education California has had but a small part to play in the endeavor to secure a national law, consequently some of the provisions of the proposed law do not give this state the protection which it should claim. While a national law may aid us materially in the examination of certain classes of personal baggage, yet it would be a great menace if it did not provide for quarantine districts in foreign lands and at home and allow the inspection of foreign plants to be made at the port of destination rather than the port of entry as was pointed out above.

The necessity of a suitable national quarantine law (one which will thoroughly protect) is made apparent by the fact that at the present time the neighboring states of Oregon, Washington, Nevada, Arizona and the Republic of Mexico have very inadequate or no quarantine laws at all, and the introduction of pests across the borders is only checked by our own state laws. But even these state laws do not protect us from the importations in personal baggage, especially by way of rail from Mexico, and our neighboring states. A uniform national law embodying the spirit of our own state laws, such as it does, and providing for quarantine inspection at the port of entry rather than at the port of destination and imposing strict quarantine upon localities known to be infested with destructive pests and diseases, will mean more to the agricultural interests of this country than perhaps any other one act which could be enacted at the present time. Especially should California be represented in the making of this law. Every influence from our state legislature, our representatives in congress and all agricultural organizations and the leading fruit men should do all in their power to exert some concerted action to aid in the passage of a national quarantine law.

This office is now endeavoring to get some such action from the state legislature which will show that California is not only interested in this law but that it is willing to do all in its power to assure its passage.

I will govern my life, and my thoughts, as if the whole world were to see the one and to read the other; for what does it signify to make anything a secret to my neighbor when to God (who is the searcher of our hearts) all our privacies are open?—Seneca.

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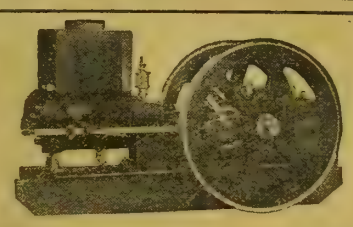

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NATIONAL QUARANTINE OF NURSERY STOCK.

Below we give the gist of the proposed bill now before Congress aiming at national control of imports and interstate shipments of nursery stock. The bill, if passed, is to become effective July 1, 1912.

It shall be unlawful to import or offer for entry into the United States from any foreign country any nursery stock until a permit shall have been issued therefor by the secretary of agriculture, and unless such nursery stock shall be accompanied by a certificate of inspection from the proper official of the country from which the importation is made to the effect that the stock has been inspected and found free from injurious plant disease and insect pests.

No person, firm, or corporation shall import or offer for entry into the United States any nursery stock unless the case, box, package, crate, bale, or bundle thereof shall be plainly and correctly marked to show the nature and quantity of the contents, the country and district where the same was grown, the name and address of the shipper, owner, or person shipping or forwarding the same, and the name and address of the consignee.

Explanation of Provisions.

Section 1 provides for importation of nursery stock by the same permit system which has been found perfectly satisfactory in relation to the importation of domestic animals. A certificate of foreign inspection is also required, and, while such certification has not in the past been a guaranty of much value, the agitation of the last two years has given it a much greater value from the European countries from which the bulk of stock is imported, and after the passage of this desired legislation such foreign inspection will doubtless be made so thorough that there will be rarely, if ever, occasion to apply the coercive measure of quarantine. This section has further been amended so that it will not affect importations of plant products solely intended for food, and provides for importation of plants for scientific purposes, and also makes provision for importations from countries where no system of foreign inspection and certification is at present possible.

Section 2 is a section of notification, and is designed to afford the government accurate information covering every package of nursery or other plant stock imported for propagation. On the receipt of imported stock at customs, notification is to be made by the agents of the treasury department, and subsequently notification is to be made by the broker or other receiver, and finally by the common carrier before transportation is begun. The information thus gained, which puts no unreasonable burden on the importer, will be transmitted at once to the state officials charged with inspection, and will enable full advice to be given concerning all imported stock showing origin and destination. It will eliminate the present danger that much imported stock is unreported and uninspected.

Section 3 provides merely for the labeling of imported stock as a condition of entry.

Section 4 is similar to section 3, and provides for similar labeling as a condition for interstate transportation.

Section 5 provides that the secretary of agriculture shall make such rules and regulations as may be necessary for carrying out the purposes of the act.

Section 6 makes provision for quar-

(Continued on Page 619.)

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Deciduous Fruit Culture

SUGGESTIONS ON THE STORAGE OF APPLES.

By Ernest Walker, Professor of Horticulture, Arkansas Col. of Agr.

(The following is from an Arkansas standpoint, but it has many valuable suggestions for the California apple grower.—Ed.)

Formerly, before the day of the large commercial orchard, and the refrigerator car, when the growing of apples was largely a matter of home supplies and local marketing, it was common to keep a supply of apples for winter use or store the surplus fruit in the common cellar. Again they were kept in piles in the open, placed on some inches of straw, covered with straw or leaves, boards, and several inches of soil. With good keeping varieties, reasonable pains, and a cold winter, this plan was very successful. Many of us remember the relish with which we ate those mellow frosted apples with their faint earthy flavor. The practice was, of course, better suited to northern climates than to warmer. The common cellar was also used to keep apples, but the fruit sometimes decayed early and badly owing to seasonal conditions, the way handled, and to various other causes. One of the chief sources of trouble, however, arose from an imperfect understanding of the principles involved in keeping fruit and in the management af the cellar. The notion prevalent was that the cellar is for the purpose of keeping cold air out, and to protect the contents of the cellar against freezing. At the North and during severe weather this is true. In milder weather, however, and southward, where the winters are mild, the reverse is true, the point under these conditions being to keep cold air in, and by careful attention to ventilation during cool weather and of nights to cool the interior of the cellar and its contents and maintain as far as possible a uniformity in the inside temperature. This uniformity, observing ones learned, had more to do with keeping apples successfully than the actual temperature itself. The latter might be a few degrees warmer or cooler, as the case might be, with less danger to the fruit than follows sudden variations.

Preserve Regular Temperature.

Once chilled, any subsequent rise in temperature causes the fruit to sweat from the deposit of moisture from the air on the cool surface of the fruit, hence a rise in temperature is more to be guarded against than the contrary. Since in ordinary storage it is commonly impossible to maintain a wholly uniform temperature, the thing then to do is to avoid sudden changes. A cool air free from excessive dampness, as much uniformity in temperature as possible, and darkness, are the conditions favorable to the keeping of fruit in ordinary storage. A well insulated door and a well insulated vestibule entrance to the cellar make it much easier to prevent sudden changes and contribute greatly to prolong the period through which fruit may be kept in sound condition.

It is desirable also to enter the cellar as little as possible except when the outside temperature is lower than that within. It is obvious that the apple cellar gives better results when wholly separate from the room in which ordinary preserved or canned fruit is kept.

It Breathes.

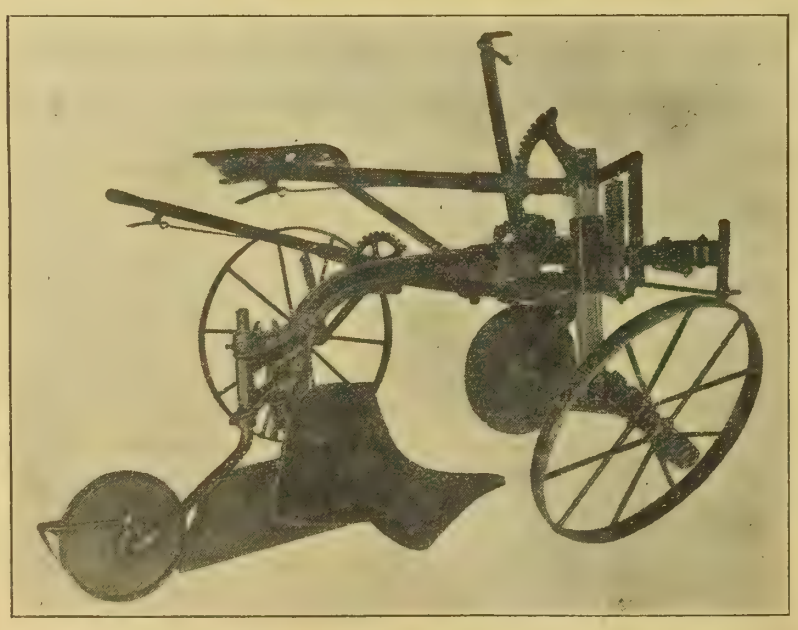
The apple is a living thing. It is taking in oxygen and breathing out carbonic dioxide as a result of the chemical processes going on in its tissues. These changes go on both before and after it is picked. They are more rapid in summer temperatures and slower in lower temperatures, although they do not cease even at the temperature used in cold storage rooms, which is near the freezing point. Different varieties show great differences in the rate at which these changes proceed under given conditions, consequently vary greatly in keeping qualities. The degree of maturity also is a determining factor. Apples which are allowed to mellow on the tree or after they are gathered have their life period greatly shortened. Yet there are no advantages to be derived from picking fruit green. The ideal stage is when the fruit is full grown, but some days before it would begin to show signs of mellowness. Other points to be observed are the selection of late maturing, good keeping varieties, and gathering the fruit in cool weather, or late in the day, when it can stand open all night to be chilled before going into the cellar. A common practice formerly was to pile the fruit in the shade in the open air or in a freely ventilated building before placing it in storage. This was for the purpose of allowing it to go through a so-called "sweat." This process was thought to improve color and favor a slight shrinkage, also a toughening of the skin. It also allowed such specimens as were not in sound condition or too ripe to develop signs of decay.

The pile was then sorted over one or more times, leaving only the sound fruit for storing. The latter result was no doubt of more real value than the so-called "sweat," as we know that diseased or scabby, or fruit showing mechanical injuries will not keep well under any conditions. Cold arrests the activities of most of these organisms present, but one of these fungi at least works even at temperatures near the freezing point. The location of the cellar on a slope or hillside to the north, with openings up and down the hill, favors free and thorough ventilation during cool nights. By opening the cellar early in the night in cold weather and closing the doors before sunrise the cellar is cooled and the cold air is kept caged in. Under ordinary seasonal conditions the cellar so managed keeps fruit fairly well. The essential idea is in keeping the cool air in, rather than in keeping out warm air or protection against freezing, and maintaining as equable a temperature as possible by careful attention to ventilation. By these methods the writer has seen apples kept in cellars in Northwest Arkansas with fair success till the latter part of January. Here, however, owing to the elevation, the climatic conditions are in many respects similar to those of points considerably northward. In the less elevated or the cotton section of the state, the attempt to keep apples out of cold storage would likely result ordinarily only in complete failure. Even in the elevated sections ally continues quite high for some weeks after gathering, which augthe temperature at gathering time usuments the difficulties. If by means of a few tons of ice the temperature of the cellar and the apples could be promptly cooled, the uncertainty of keeping apples till midwinter or possibly later would be greatly reduced, as this prompt cooling is very important in retarding the ripening process and lengthening the keeping period.

Handle Carefully.

It is not advisable, however, to attempt the storage in common cellars of large quantities of fruit intended for shipment in late winter. It is too big a risk for the grower; nor is it necessary, since in most localities where apples are grown commercially ice manufacturing and refrigeration storage plants of large capacity are

DEEP PLOWING



surely increases crops and insures crops under adverse climatic conditions. It is recommended by every agriculturist connected with beet sugar companies in California, and every contract requires it. Every bean raiser knows it is essential to success.

Webster says that plowing is "the act of **TURNING UP** the soil with a plow." The words "Turning up" mean an act which not only loosens the soil but by "Turning" mixes it so as to secure the benefit of its chemical elements.

The Egyptians farm a rich silt renewed each year by the Nile overflow They have continued using the same kind of sharp stick which their forefathers used. It loosens their soil which does not need mixing.

Our farmers have always used plows which have both loosened and mixed the soil to their depth capacity. The factories and farmers have tried to adapt these moderate depth bases to deep plowing by lengthening and raising the moldboards. Such changes allow the share to be set to the required depth, but, like the Egyptian's stick, it is merely a shover; it does not turn or mix the soil.

The Oliver Chilled Plow Works and ourselves have spent, during the last four years, a great deal of time and thousands of dollars in experimenting with different new shapes in plow bases. We have found the proper shape for deep plowing and offer in the Sulky shown in this cut not only the latest and best, but also THE ONLY PLOW WHICH WILL TURN AND MIX AS WELL AS LOOSEN THE SOIL TO THE DESIRED DEPTH.

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within reach of the grower. These plants furnish a low and uniform temperature and are capable of holding sound fruit of the better keeping varieties in perfect condition till the following April or May. But right here is a point for the grower to carefully note. Fruit does not keep in cold storage satisfactorily unless it is carefully and properly handled by the grower before sending it to the storage room. Growers are constantly making serious mistakes in the matter of storing fruit, and to some of these I wish to call attention and emphasize.

Don't Store Poor Stuff.

In the first place it does not pay to store inferior grades of fresh fruit for marketing, no matter how short the fruit crop may be in your section. Such fruit does not keep well, and in the next place it is a blunder to try to get the public to pay a good price for poor fruit. In 1907, misled by reports of a short crop and the prospect of high prices, growers stored vast quantities of stuff not entitled to rank above the grade of culls. It began to "go down" shortly, and was rotting, and shrinking to the extent of 30 or 40 per cent by January. In some cases the entire quantity rotted by March, and the grower was out the cost of cratage, freight and storage above the loss of his apples. It does not pay.

Grade.

Grade the fruit according to size, color and quality, and pack so that the contents of packages are the same from top to bottom. Mark and sell according to grade. And (if the conditions seem favorable) store only the best grades. But don't store even these grades if the price at the orchard is fair and you have an offer at a reasonable price. Let those who have the capital and who make a specialty of storage take the risks, unless you are carefully studying the fruit supplies and markets over the whole country. It is in essence simply a form of speculation, a gamble, although possibly an intelligent one, that the price of fruit will advance after the main supplies are cleaned up.

It goes without saying that fruit, to rank as first class, must be free from blemishes due to fungi and insects. It must be of fair size and color for the variety, uniform, and so carefully picked and handled that it shall be free from even slight bruises. If only such fruit is stored, the risk of keeping and of realizing a satisfactory price under changing market conditions is very much less than otherwise. Tight packages for cold storage apples, head cushions at top and bottom of barrels are desirable. Paper wrappers are of value in packing the fancy grades.

Store Quickly.

Now comes the point which, possibly more than any other, is a common source of loss here in Arkansas. The intelligent grower may as a matter of good judgment observe the points just mentioned, but blunder here because the lesson learned comes only after experience or very careful inquiry. The mistake referred to consists in barreling or boxing up apples and letting them lie in the orchard or in buildings for several days before they are sent to storage. Sometimes the car remains on the track several days before the fruit is sent to storage. In one case coming to my knowledge the fruit was kept out of storage for several weeks. Fruit so handled is almost sure to shrink to the extent of 30 or 40 per cent by January, sometimes more.

One year, as an experiment, the writer kept thirty barrels of apples in a shed at the barn during warm weather in late September. They were allowed to remain there in the shade for a week before they were hauled away and placed in storage. In the last apples shipped that season (in March) the shrinkage was not over 10 per cent for apples placed promptly in storage, while for the bulk of the stored stock, consisting of several carloads shipped out before this, the barrels were simply opened and "plugged" (the insertion of two or three apples at the top to prevent shaking about) in loading them out. Of the thirty barrels, however, held for a week during warm weather only ten barrels were left after rerunning them when shipping out the last fruit. The rest of this particular lot had rotted.

The rule to be invariably followed in handling apples for storage is to get them into storage the same day they are gathered and packed. Occasionally it may be necessary to hold till the next day or over night, but the rule should be to have them in the storage room within three or four hours after being packed. The sooner the better.

Much Depends.

The opinion has been prevalent that apples from cold storage "go down" quickly when taken out of storage. This is not necessarily true, as recorded experimental results of investigations have shown.

Much depends on the variety, ripeness, soundness or condition of the fruit stored, and the temperature to which the fruit is removed. The sudden exposure of apples from cold storage to a much warmer temperature results in copious "sweating," even to the point of dripping in a few minutes. The packing of better grades of fruit and earlier disposal of the fruit would obviate the necessity of much of the "rerunning" of stored apples and prevent much loss. Where necessary to rerun the fruit, some plan of avoiding this sudden extreme change of temperature would be of great value. This might be accomplished by rerunning the fruit in cooler temperatures, or letting it stand unopened and compact in a slightly warmer room for a day or so before opening and rerunning it.

SCIENCE IN THE ORCHARD.

The state of Kansas has not been a prominent fator in the apple market in the past, but it may become so in the course of the next few years. If it ever does, the credit will be due to the Kansas Agricultural College, which has been doing missionary work in the direction of scientific orchard culture. The college last year "borrowed" orchards in the state to give the owners practical object lessons. One of these orchards, located near Fort Scott, was twenty years old and had never been distinguished for its product. The college experts took over half of the orchard, containing 105 trees, used the spraying machine freely, and gave it scientific treatment. The result was that these 105 trees yielded 456 bushels of choice apples, besides a quantity of apples that the owner of the orchard either made into cider or sold as windfalls. The cash receipts altogether were $1,027.40. The net profit was placed at about $900. This was more than he had realized in twenty years. Naturally, he has become a convert to scientific treatment of orchards. Its value was demonstrated practically before his own eyes. One such lesson is of more value than a ton of pamphlets and learned essays. Agricultural institutions as well as farmers can learn something from this experiment.—Green's Fruit Grower.

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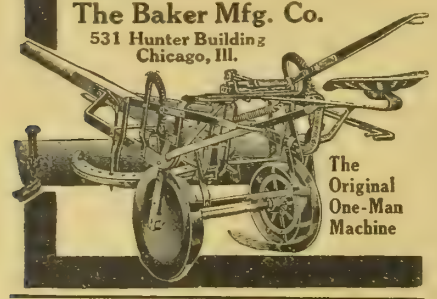

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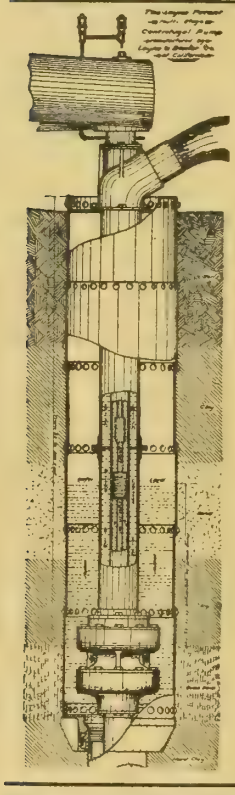

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Where there is much light, the shadow is deep.—Goethe.

Conifers for California

At a recent monthly meeting of the Los Angeles County Horticultural Society composed largely of nurserymen, seedsmen and gardeners, Mr. J. J. Reeves delivered an address on the conifers of Southern California which was listened to with greatest interest, and the members expressed themselves as having been much profited by it. It contains such a fund of information that we quote from it extensively. Mr. Reeves said that he could no more than touch upon the coniferae in such a short address. He divided the coniferae into six classes, as follows: Abietineae, Auracariae, Cupressineae, Taxeae, Podocarpeae, Taxodieae.

ABIETINEAE.

The best examples are Abies (Firs), Cedrus (Cedars), Larix (Larch), Picea (Spruce) and Pinus (Pines).

Abies.

Of the Abies the best are A. conocolor, A. amabilis, A. nobilis and A. grandis; these four are California natives and are all good. A. pinsapo is a species from Spain; A. Nordmanniana from the Crimea. All Abies I find have a tendency in Southern Caliofrnia to grow stronger upon the north and east sides, and to obtain the very best results they should be planted in such a position that they are in the shade of buildings or tall trees upon the south and west.

Cedrus.

The true cedars are well adapted to our climate. C. Libani is, in congenial situations, the grandest of all, but of little use in Southern California.

Cedrus deodara, the Himalayan cedar as known here, is correctly, Cedrus Atlantica glauca; this is the most ornamental and most useful cedar. It should be used entirely as specimens as its great beauty lies in its well-furnished base, and if pruned up for shade purposes becomes at once unsightly.

Cedrus Atlantica, C. Atlantica glauca and C. verticiliata are of somewhat slower growth in the young state, but finally will catch up with C. deodara. Either of these should be used extensively as avenue trees. They all three carry their limbs somewhat horizontal to the trunk and do not look "butchered" when trimmed up.

Larix.

These are not of much use here. The best for massing are the European Larch (L. decidua) and L. occidentalis.

Picea.

The only ones in this large tribe I recommend for California are P. Alcockiana, P. excelsa and P. orientalis. Of the three, P. excelsa and its very many varieties is best.

Pinus.

The Pines are particularly useful and should certainly be used more. For avenue planting P. Canariensis, P. Torreyana and P. halapensis; near the sea coast P. maritima. For massing we can add to these mughus and P. muricata in cool shady situations. P. ponderosa and P. Coulteri both are slow. P. Coulteri, however, is well worth growing as garden specimens. P. Pinea (Stone Pine), P. Canariensis and P. Coulteri are the best.

Pinus insignis I do not advocate as good for any purpose; it is a fine appearing tree but seems to have the faculty of either dying or running back just when it has attained its full beauty. The cause of this is hard to explain, for it seems to be a pine particularly exempt from pine fungi.

AURACAREAE.

The next tribe, Auracareae, contains the Auracaria, Agathis and Cunninghamia.

Auracaria.

Auracaria are too well known to need any discussion.

As specimens, A. Bidwillii, A. excelsa and the latter's many forms are the standards.

Auracaria imbricata is both ornamental and interesting but of very slow growth.

A. Cookii and A. Cunninghamii are only for massing, as they soon shed their lower branches.

Agathis.

The only one in the tribe of any account in Southern California is Agathis australis, the Kauri Pine. Unlike the true pines the needles or leaves of the Agathis are very thick and broad. This variety is well worth planting.

Cunninghamia.

This is seldom seen; it is closely allied to Auracaria, and the best is C. lanceolata.

CUPRESSINEAE.

This tribe is very large and a very hard one to select from. The most known and most used are undoubtedly the Lawson Cypress (Chamaecyparis Lawsonianum). The best examples of Lawson Cypress are varieties: viridis, erecta, pendula, and horizontalis, with their many color distinctions, as aurea glauca, argentea, etc.

Cupressus.

C. Lusitanica glauca and C. Guadalupensis glauca are without question the best tall types; C. Guadalupensis is perhaps the best form.

Cupressus Knightiana is the very best tall green variety, and although a Californian type, is seldom seen.

C. Goveniana, another California variety, is of a tall loose growth.

C. McNabiana is a good dwarf, dense form, and should be better known.

C. sempervirens, the Italian cypress, is in its true type very slender, erect, and dense. The variety most seen in California seems to be a bastard between C. sempervirens and C. funebris.

C. funebris, the sombre cypress, is, as its name implies, funerial in habit in its young state and is somewhat like the Italian, but it branches out very irregularly when old and its color is perhaps the blackest of all cypress.

C. Turnefortii is the best small close specimen cypress.

C. majestica is, as its name implies, majestic, of very tall straight growth, loose and slightly pendulous habit.

C. Arizonica, for dry situations one of the best; this cypress is a very heavy wooded, coarse, dense type in the young state strongly variegated as it attains its growth. May be said to be silvery grey. A good useful variety and one bound to become a favorite.

Juniperus.

Juniperus come next in this division, another large tribe, but few of them of any use here.

Juniperus Virginica, Juniperus communis and its variations, are good. Juniper Hibernica, the Irish Juniper, is a very pretty variegated type but of slow growth.

Juniper Bermudiana, I think, is the

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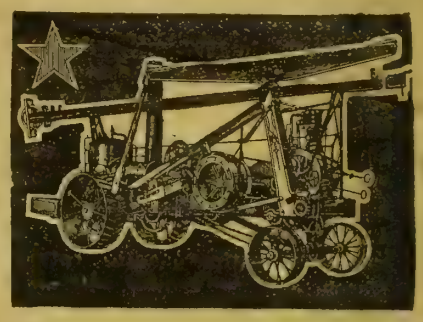

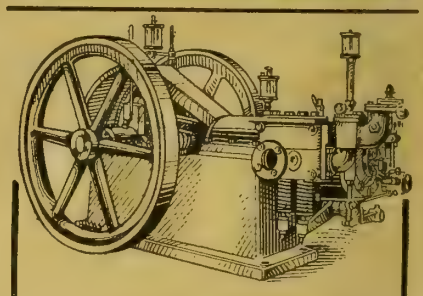

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best for this locality. It is a good grower and retains its color.

Two procumbent types, Juniperus Sabiniana and J. prostata, are excellent for ground covers.

Thujas.

This is a useful group, although most all Thujas when they become old are more or less ragged and expose the dry inside. For heavy planting the best are T. Chinensis and T. occidentalis.

Thuja aurea, T. compacta, T. pyramidalis, T. densa and T. Elwangeriana are the best for specimen use.

Thuja gigantea or, correctly, Libocedrus decurrens, is the finest, not only of all Thujas, but of all tall conifers. It is symmetrical, handsome and a fast grower; it should be used as a country roadside tree, growing well in any soil.

PODOCARPEAE.

In the next tribe are the Podocarpus; I am only slightly acquainted with them and aside from the interesting fruit some of them bear, I do not commend them.

TAXEAE.

Another division. The best examples are Taxus, the Yew and Torreya.

Taxus.

Of the Yews, T. baccata, the common Yew, is the best for general use.

T. baccata fastigata, the Irish Yew, does well here and is taller and more compact than the common T. baccata. T. brevifolia is a native species somewhat like the Irish, only of a lower habit. T. cuspidata, a dwarf Japan Yew should be grown more.

All Yews to do well should be planted on a damp heavy soil.

Torreya Californica.

The California Nutmeg or Stinking Yew, is the only Torreya worth growing, and if afforded a moist situation will make a very ornamental tall shrub.

A Japan species, Torreya taxifolia, I believe would be of use here under good conditions. The only plant I ever saw here was planted on a light soil and was anything but handsome or vigorous.

TAXODIEAE.

In the sixth and last division we have Cephalotaxus, Cryptomeria and Sequoia.

Cephalotaxus or Cluster Yew.

Of these there are but three worth growing; all of them are slow.

C. drupacea and C. pedunculata, both Japanese varieties, are the best. C. Fortunei, a Chinese species, is more compact but also dwarfer than the Japanese.

Cephalotaxus are perhaps more handsome than Podarcarpus, the fruit being carried on long drupaceous branches and are when grown well somewhat showy shrubs.

Cryptomeria.

Cryptomeria elegans is without doubt the most ornamental and useful, and to get its full beauty should always be used as a specimen.

Cryptomeria Japonica is also very handsome in its small state, but will in a few years shed its lower branches. However, I think it well worth planting as a tall unit in masses.

C. Japonica var. Lobbii is seldom seen but quite handsome; it is really a dwarf form of Japonica and is fairly dense.

Sequoia.

Sequoia gigantea. This handsome tree should be used more, and if planted on loose or well drained soil will retain its lower branches and not become sparse or thin.

S. Sempervirens, the Redwood, is well suited to Southern California, and being a deep rooted tree, I con-

(Continued on Page 629.)

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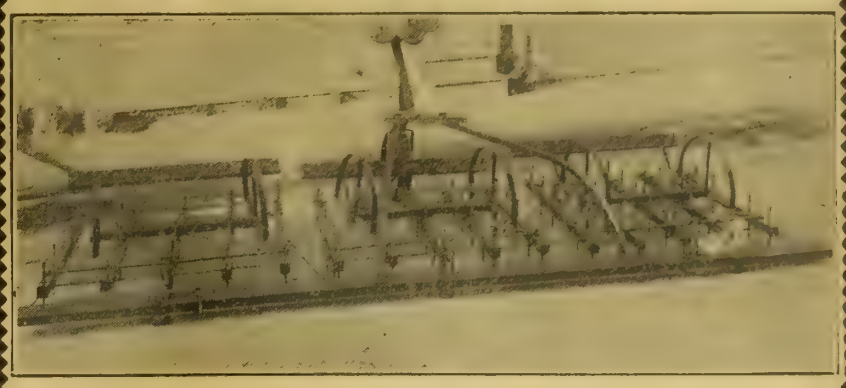

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Resources

Loans and Discounts		$4,829,947.45
U. S. Bonds		250,000.00
Premium		2,500.00
Other Stocks and Bonds		455,044.14
Furniture and Fixtures		70,000.00
Real Estate		14,837.24
Due from Banks and U. S. Treasurer	$1,860,630.94	
Cash on hand	978,771.40	
		2,839,402.34
		$8,461,731.17

Liabilities

Capital Stock paid in	$ 200,000.00
Surplus and Undivided Profits	771,343.74
Circulation	196,400.00
Taxes and Contingent Fund	60,718.29
DEPOSITS	7,233,269.14
	$8,461,731.17

W. H. Holliday, President. Marco H. Hellman, Vice-Pres.
J. H. Ramboz, Cashier.
H. H. Martin, Asst. Cashier. O. A. Cox, Asst. Cashier.

COMPARATIVE DEPOSITS

27 November, 1908 - - - $4,697,065.62
16 November, 1909 - - - - $5,842,344.28
10 November, 1910 - - - $6,209,777.73
5 December, 1911 - - - - $7,233,269.14

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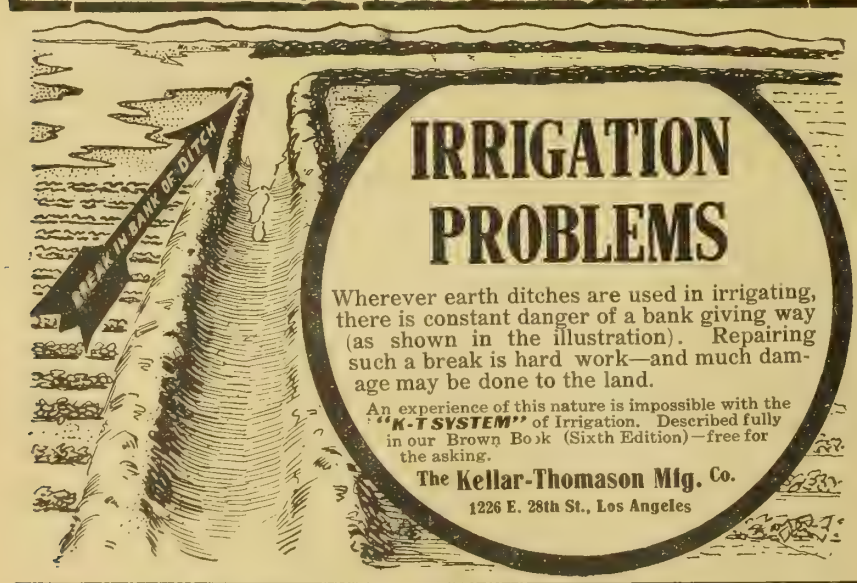

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Small Fruits and Vegetables

THE TRULY CELEBRATED VIRGINIA PEANUT.

The original home of the peanut is not definitely known. Africa, Europe and South America each claim it. Brazil comes the nearest to establishing its claim. Certainly the United States leads all countries in its development, and the variety of uses to which it is put. It was introduced into the United States early in colonial times, but did not become of any commercial importance, or attract the attention of the business world, until between 1870 and 1875. For 25 years thereafter the growth of the peanut industry was very gradual. In fact, the development of the product has been practically about all accomplished since 1900. Since that time it seems to have doubled nearly every year. The normal crop in Virginia is about 12,000,000 bushels yearly. The value to the farmer is not far from 75 cents a bushel, ranging between 60 cents as the minimum to $1 as the maximum.

The peanut is a peculiar crop. It is a legume which develops its pods underground. In different sections it is known as goober, goober pea, pindar, ground pea, ground nut and peanut. New varieties are being introduced, each having its special features to recommend it.

The principal types of peanuts grown in Virginia are the bunch, runners and Spanish. The bunch nuts grow close around the roots, the runners grow farther away from the stems. The Spanish nut is small, generally only two peas to the pod. It weighs heavier than the other varieties and is much richer in oil.

The soil required is a sandy, friable one that will not bake or get hard on top after rain. It must be thoroughly prepared and finely pulverized. Lime is an essential element in the crop. The average width of the rows is 36 inches, and the plants are 12 inches apart in the rows. The nuts used for seed must be shelled by hand, so as not to disturb the skin covering the kernel and holding the two halves closely together. A half bushel of shelled nuts will plant an acre.

A one-horse planter drops and covers the seeds at regular intervals, and presses the soil down closely. Except for the shelling of the seed peanuts the crop is not much more trouble to plant than corn, and the cultivation is about the same. The most interesting feature about the nut is its manner of forming the pods. The bloom of the peanut comes out on the underside of the vine, at the joints, and soon dies. A little stem, or "peg," as it is termed, is formed, and hangs downward. As it lengthens, it penetrates the soil. On it under the surface hang the peanuts. "Pegging" time is the critical period in the life of the plant. If the soil be hard, the peg cannot enter, and the peg dies—no peg, no peanut. The yield varies, like all other crops, depending upon the man and management, say from 30 to 75 bushels to the acre.

At digging time, the general way is to take off the moldboard and run the plow close to the row on each side. This cuts the roots and leaves the plants standing upright, just as they grew. The hands come after the plow, lifting the plants from the loosened earth, gently shaking off the dirt, and leaving the peas to dry out partially in the sun.

The most exacting part of the work is stacking or shocking, so as to cure properly. A pole about 8 feet long, sharpened at the lower end, with two crosspieces nailed to it about 18 inches from the point, is firmly driven into the soil, leaving the crosspieces about 6 inches from the ground. Around these poles the peas are placed, about as beans are stacked in bean-growing sections. The crosspieces keep the lower strata off the ground. In stacking the nuts are turned inward toward the middle, leaving the foliage exposed. This keeps the nuts from getting weather-beaten.

In this shape the nuts remain, say, six weeks, and then are either picked off by hand or threshed off by machinery. A machine is now perfected that takes the nuts from the vines rapidly and without injury. By the farmer the nuts are placed in large sacks holding four bushels each, 22 pounds to the bushel. In this shape they are stored until sold. At this point the peanut ceases its history as an agricultural product, and goes into the hands of cleaners, assorters and manipulators and becomes an industrial product. In this latter half of its history, before it reaches the consumers, it may pass through 50 different operations before it emerges as one of the many peanut products, candy, oil, butter, salted pea, nuts, or as regular peanuts, for the peanut stands of the country.—Orange Judd Farmer.

SHIPPING TOMATOES AND MELONS FROM VALENCIA, SPAIN.

By Consul Robt. Frazer.

Tomatoes for export are packed in boxes of two to three dozens arranged in two layers, and 16 of these small boxes are inclosed in a skeleton crate of two compartments. The total cost of boxes, crate and packing, including cartage and shipping expenses, is about 72 cents. This trade, however, shows no expansion in recent years, but rather appears to be declining since the canning of tomatoes has been brought to such perfection. Moreover, tomatoes from the Canary Islands, France, and the Channel Islands are now largely supplying demand for fresh tomatoes in Great Britain, which was formerly dependent to a great extent on the products of this district.

Melons are packed in boxes of two compartments containing two to three dozen each and about the size of an orange case. They are wrapped in rice straw and the total cost of boxes, packing material, labor, and shipping is approximately 30 cents per box. Melons are usually purchased by the dozen of standard size, which is determined by an iron ring. All fruit just passing through the ring is counted three dozen for two of standard dimensions, and if very small, two dozen are allowed for one. As this custom is nearly always in favor of the purchaser, growers have been agitating for some years to have melons sold by weight only, but so far have not succeeded against the combined opposition of packers.

The finer and more delicately flavored melons are rarely exported, owing to their liability to deterioration in the poorly ventilated holds of ordinary cargo ships, as no cold storage methods have been provided yet for the transportation of Valencia fruits and vegetables either by sea or land. The variety of melon most exported is of oval shape and canary color and is rather insipid, but resists the sea voyage well.

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A SENSE OF BEAUTY.

There were two brothers; one was a prosperous manufacturer, the other a farmer. Both were more than ordinary men, in that they conducted their business with brains and energy. The manufacturer came to visit the farmer and so as they walked over the fragrant fields, they had a heart to heart brotherly talk. The farmer was somewhat discontented. He felt that somehow he was not making the amount of money that he should and he appealed to the well-trained, constructive understanding of his brother for a reason.

"Well, Jim," said the manufacturer, "I can see one reason. You are too much like the great mass of farmers. You have too little sense of the beauty of your surroundings. You think that all time, labor and money laid out in that direction isn't practical, that it is just so much time, labor and money wasted. I have learned in my business that a sense of beauty is built upon a sense of order and harmony, and let me tell you, Jim, a farm is a good deal like a factory; there must be a close relation of order and harmony between the several parts. It would pay you to get some good landscape artist to come here and make a study of this farm and the general arrangement of the fields and buildings with an idea, first, of the greater economy of time and labor in their relation to each other; second, with a view to making the whole thing look better, handsomer. Put things in good workmanlike shape to start with; then make them look neat and attractive.

"You think there is no money in those things. I tell you that a sense of order and beauty is one of the fundamental things in a farm or factory in making either pay to the best degree. Where order and beauty exist there is the least waste of time and labor. System prevails.

"Most of the farms I see as I spin out in the country with my automobile, strike me with the idea that the man who lives there has no sense of order or beauty. I notice it in the buildings, in the horses, in the cattle, in the general slip-shod look of things all about. Do you know that a man with that sort of idea of the relation of things can't make money.

Then as they strolled back to the house they fell to calling up the farmers whom they knew in boyhood who were the most prosperous. In every instance their farms and premises showed a well-kept, orderly and attractive appearance. "I tell you, Jim, there's something in it," said the city brother and Jim acknowledged that it looked that way.

Now this simply means that with either farm or factory, as the owner is, so is the farm or factory; the relation of the man to his business. Is he big enough for it? It takes a man of good big brain and that brain well stored with right ideas to make a farm respond to the best degree. We are just awakening to the understanding that the farm boy needs some special education and mental training to make him "big enough for his business," and a sense of order and beauty is a very important part of the business.—Hoard's Dairyman.

Yuba County's orange and olive crop is the greatest ever.

CARE OF TRUNKS OF PALMS.

Miss K. O. Sessions.

Very few are willing to let the palm grow as it will gathering its old and faded leaves about its own trunk and although dry, and apparently useless they "hang on' 'forever(?)

In very many cases I think the old leaves add a great deal to the dignity of the palm, but if trimmed off the base of the palm leaf should not be cut too close to the trunk. At Honolulu the air is so filled with the minute spores of ferns that it settles like dust everywhere and the result is that the rough trunks of all the palms are veritable ferneries. All sorts and kinds are growing in the axils of the old palm leaf and soil gathers to some extent, helping to make the best of materials for the growth of the young ferns. Here we can with very little care ornament the trunks of the large date palm with several varieties of ferns, kenilworth ivy, sedums in variety, lycopodium, asparagus, sprengerii, the strawberry geranium and many a dainty growing plant that has few roots and loves shade and moisture. As the date palm becomes twenty years old about the base an accumulation of surface roots are not pleasing and this can be improved with a circular bed of begonias or ferns or both together—built up from six inches to eighteen inches above the ground as conditions require. Rough rock or even cobbles serve to hold up the bed and look well with the plants. Several varieties of orchids would grow in just such a location if the watering could be properly managed.—California Garden.

EDGING PLANTS.

A subscriber from Allegheny County, Pennsylvania, wants to know if there is anything better for an edging than portulaca. She has found it very satisfactory, but it blooms only during the early part of the day. In Europe, the most popular plant for a flower edging is blue lobelia. This blooms continuously throughout the summer and autumn. It is a little more difficult to start than portulaca, and it does not bear the hot sun so well. For a white border plant, sweet alyssum is excellent for general purposes. The dwarf compact petunia is also very desirable for an edging, being showy, free blooming, and continuing in bloom for a long time. For a permanent edging of foliage, the hardy plant known as aegopodium podagraria is among the best. It is as attractive as the silver leaved geranium, and when once planted will remain for years. An annual that is also much used in Europe is the dwarf single French marigold. A good strain of this annual is very effective; the flowers, however, are mostly brown and yellow, colors that are not always appreciated. A good edging much used in Europe, too, is dwarf ageratum. It is readily grown from seeds, is everblooming, and likes the hot sun.—Park's Floral.

Population must increase rapidly, more rapidly than in former times, and ere long the most valuable of all arts will be the art of deriving a comfortable subsistence from the smallest area of soil. No community whose every member possesses this art can ever be the victim of oppression in any of its forms. Such a community will be alike independent of crowned kings, money kings and land kings.—Lincoln.

BULBS

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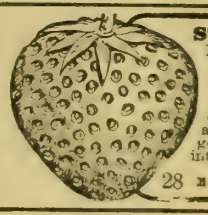

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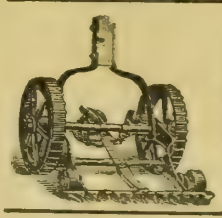

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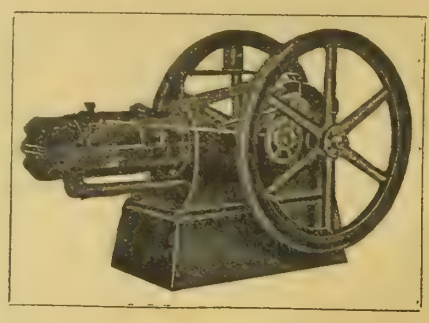

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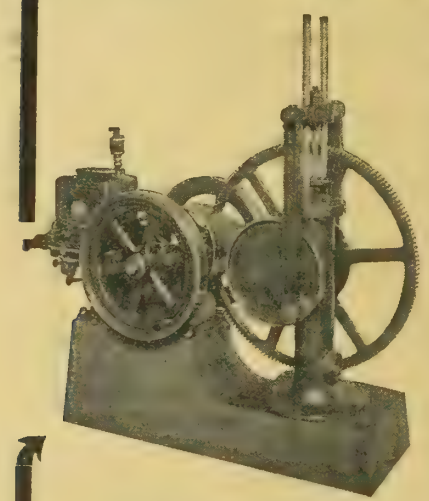

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Irrigation and Forestry

PROTECTING DOMESTIC WATER.

Secretary Wilson has decided that the interests of cities and towns which obtain their water from streams having their watersheds within national forests call for special measures of protection, and he has therefore developed a plan of co-operation for the Department of Agriculture with those communities which are alive to the importance of keeping their water supply pure.

There are many western towns and cities, some of them of large size, which derive their water from drainage basins lying inside the national forests. One of the recognized objects of forestry is to insure the permanence and protect the purity of municipal water supplies. As the forests are maintained for the benefit of the public, Secretary Wilson considers it the duty of his department to do all that it can both to prevent the pollution of such supplies and to create or maintain conditions most favorable to a constant flow of clear water.

Stock raising and occupancy of the land for the various kinds of use which are ordinarily encouraged on the national forests may be highly undesirable if allowed on drainage basins which are the sources of drinking water. There is also to be considered the injury which may be done if the water is silt-laden. By protecting and improving the forest cover and by enforcing special regulations to minimize erosion and to provide for the maintenance of sanitary conditions, the government will try to safeguard the interests of the public.

A form of agreement has been drawn up, providing that when co-operation is entered into between the secretary of agriculture and any city desiring conservation and protection of its water supply, the secretary will not permit the use of the land involved without approval by the town or city except for the protection and care of the forests, marking, cutting and disposing of timber which the forest officers find may be removed without injury to the water supply of the city, or for the building of roads, trails, telephone lines, etc., not inconsistent with the objects of the agreement, or for rights of way acquired under acts of Congress. The secretary also agrees to require all persons employed on or occupying any of the land both to comply with the regulations governing national forests and to observe all sanitary regulations which the city may propose and the secretary approve.

The agreement provides for the extension and improvement of the forests on the part of the government by seeding and planting and the best methods of silviculture and forest management, so far as the funds available will permit. The city on its side is expected to assist in the work by paying the salaries of the additional guards necessary to carry out the agreement, and in case extensive forest operations are immediately desired by the city, it would bear the major part of the cost entailed by this work.

WATER POWER WITHDRAWALS.

Over a million and a half acres of public land now stand withdrawn by the government as being valuable for the possible development of water power. During October the United States Geological Survey recommended the withdrawal of 54,422 acres as having power possibilities and the restoral of 2600 acres in Montana and Wyoming because field examination by the Survey showed them not to be valuable for that purpose.

NEW TOPOGRAPHIC MAPS.

Fourteen new topographic maps were printed from engraved plates by the United States Geological Survey during October, the average edition being about 3500 each. These maps are widely distributed over the United States and those of California are:

Gilsizer Slough, Grimes quadrangle, Mills quadrangle, Ostrom quadrangle, Sutter quadrangle, Yuba City quadrangle, Sacramento Valley ,price 15c.

The editions of these and reprints of other topographic maps made a total output for the month of 102,266 copies. The maps are sold by the Survey at the nominal cost of 5 cents a single copy or $3 a hundred (except certain special or extra large sheets). The Survey has published over 2000 maps, covering nearly 40 per cent of the area of the United States. For the convenience of purchasers index maps showing the areas covered by Geological Survey maps of the several states will be furnished on application to the Director of the Survey at Washington.

WEATHER EFFECT OF FORESTS

By direction of Secretary Wilson the weather bureau and the forest service are making an exhaustive study of the entire question of forest effects upon climate and stream flow. The experiment station at Wagon Wheel Gap, Colo., established for the purpose of this investigation, is now on a firm basis, and a complete series of observations has been made during the last eight months. Co-operative meteorological stations are also maintained in the Conconio National Forest in Arizona, and in the Fremont National Forest in Colorado, data from which will be available for study and comparison in connection with the records at Wagon Wheel Gap. However, it should be understood that results obtained in this semi-arid region would be without value as a criterion for determining problems in connection with runoff that obtain in the humid regions of the East. It is hoped that in course of time an experimental area may be secured and the necessary plant installed in both the Allegheny and White Mountain regions.

AMOUNT OF WATER WHICH MAY BE STORED IN SOILS.

Actual experiments show that the actual field water capacity of arid soils varies from 14 per cent for a very sandy loam to 18 per cent for a clay loam, with an average of about 16 per cent. The greatest water capacity would be even more. At this rate every 12 inches in depth of soil can hold from 2.25 to 2.65 inches of water, or an average of 2.45 inches. At this rate it is possible to store approximately 20 inches of water in the upper 10 feet of soil. This is from one and one-half to two times the annual rainfall over the better dry farming sections. Therefore, it should be and is possible to store one or two year's rainfall in the soil, by using proper tillage methods.—D. W. Frear, Instructor in Agronomy, Colorado Agricultural College.

WHAT RIVERS CARRY.

Colorado River discharges during an average year into the Gulf of California 338,000,000 tons of mud and silt as suspended matter. In addition to this the dissolved substances in the water include 4,550,000 tons of sodium chloride, or common salt; $3,740,000 tons of Glauber's salts; 4,000,000 tons of lime; 2,400,000 tons of gypsum; and 4,800,000 tons of Epsom salts. In spite of all this dissolved material the Colorado at its mouth is not considered to be a stream of unusually high mineralization for that region of the country. The reason is that the river also carries so enormous an amount of water that the dissolved salts constitute a comparatively small proportion of the total discharge. Other streams in the country contain dissolved salts in greater concentration—for example, the Elm Fork of Red River, in Oklahoma, discharges nearly 1,300,000 tons of common salt annually. Although this amount is not so great as that discharged by the Colorado it is much greater in proportion to the size of the area drained. The discharge of salt from the Colorado is equal to 20 tons annually to each square mile drained by the river, but the salt in Elm Fork of Red River is equal to 1680 tons per square mile of area drained. The same river discharges annually 177,000 tons of magnesium chloride, 168,000 tons of Epsom salts, 690,000 tons of gypsum, and 54,000 tons of lime. These quantities, too, are considerably greater than those carried in the Colorado in proportion to the size of the drainage area.

Determines Practical Value of Waters.

The foregoing are a few of the figures of incidental interest presented by Water Supply Paper 274 of the United States Geological Survey, entitled "Some stream waters of the western United States." The work reported by this volume is, however, of higher practical importance than the above statement would indicate. It is the result of an investigation of the quality of western stream waters made for the purpose of determining their availability for use for irrigation and other purposes. For a water supply system the quality of the water available determines its usefulness quite as much as the quantity. Some waters contain ingredients that make it impossible to use them for irrigation unless certain precautions are taken in applying them to the land and in draining them off. Certain ingredients in water make it unavailable or destructive if used in boilers and the quality of water used in a manufacturing plant may very largely determine the quality of the product of manufacture. The report just published therefore can not fail to be of material value to the manufacturing and agricultural interests of the West; and the proper consideration of the information that it contains will prevent many costly mistakes in connection with the industrial development of that part of the country.

He who digs a well, constructs a stone fountain, plants an orchard, builds a durable house, reclaims a swamp, or so much as puts a stone seat by the wayside, makes the land so far lovely and desirable, makes a future which he cannot carry away with him, but which is useful to his country long afterwards. The man who works at home helps society at large with somewhat more of certainty than he who devotes himself to charities.—Emerson.

He is no clown that drives the plow, but he that does clownish things.—Poor Richard.

NATIONAL QUARANTINE.

(Continued from Page 611.)

antining foreign districts or particular plant products in foreign districts to exclude disease or insect enemies which can not otherwise be kept out of this country.

This is the provision which has been most objected to by importing nurserymen, and especially by importers who have invested in foreign nursery enterprises in France. It is not the intention to apply this section except in the case of diseases or other dangers which can not be kept out by inspection or disinfection; in other words, at present it would apply only, so far as we know, to the potato wart disease and the white-pine blister rust. The fears are absolutely groundless that the department of agriculture, in enforcing this section, would unnecessarily interfere in any way with legitimate importations of plants, and in those cases where importations carry grave dangers the importers themselves, if honest in their intentions, should be the first to assist in keeping out these dangers.

This same provision in the law relating to the importation of domestic animals has been the means of safeguarding the livestock industry of this country, at a saving beyond computation, and there has been no abuse or complaint of abuse of the power thus delegated.

Section 7 provides for quarantining districts within the United States where new diseases or insect enemies have gained a foothold until such districts have been freed from disease or insects.

Referring to the animal law again, a similar provision has been of untold value in the United States in stamping out, for example, the foot-and-mouth disease and in limiting the spread of the southern cattle fever. In the case of insects, it would enable the government to stamp out any sporadic infestation of the brown-tail moth or gipsy moth, or the potato wart disease, the white-pine blister rust, or the chestnut blight. This section hitherto has not been especially objected to by nurserymen, and is certainly a very essential provision of any measure aimed at the protection of all plant interests.

Section 8 defines nursery stock.

Section 9 provides penalties for violations of any of the provisions of the act.

Sections 10 and 11 relate to the appropriation and date when the act shall become effective.

This bill, when it comes before the first regular session of the present Congress, will be subject to amendment and a full discussion, and all reasonable criticisms on the part of nurserymen will be considered and if, to meet their criticisms the bill can be amended in any way without losing the protection aimed at it will be so amended.

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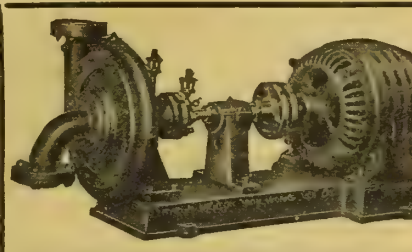

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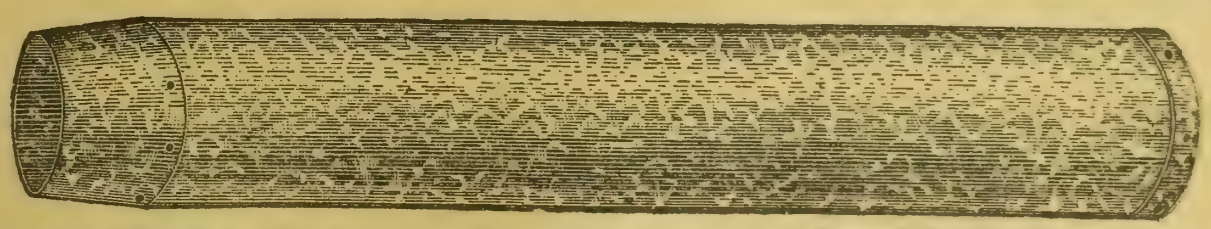

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COUNTIES COMMITTEE.

The sixteenth semi-annual meeting of the Counties Committee of the California Development Board will be held in Los Angeles January 12, 13. The general theme of the meeting will be getting ready for the crowds who will visit the Coast during the international exposition and the opening of the Panama Canal. One feature of the two-days discussion will be the handling of emigration. San Francisco boosters will make the trip to Los Angeles in special train.

BEE KEEPERS.

We give on another page program of the Northern California Bee Keepers Association which will meet in Sacramento December 27, 28. We note one of the features is the arranging and framing of a bill for appointment of state inspector. This was taken up by the State Bee Keepers Association — composed largely of Southern Californians—at the meeting held a year ago. The bill introduced failed to become a law because of disagreement within the bee keepers' ranks. The bee keepers of the state ought to get together in this matter, and whether it be accomplished through the State Bee Keepers Association or not, it can only be done by united effort. When one section works against another, legislators find the easiest way out of the difficulty is to refuse to have anything to do with the proposition at issue. Let our bee keepers unite.

CITRUS FAIR.

Governor Johnson and enough of California's assemblymen and senators to make a quorum attended the Citrus and Olive Exposition at Oroville last week. At the opening night's exercises Governor Johnson congratulated the people of Oroville upon the "blending of the romance of old California with the progress of new California." The spirit of Butte County," declared the Governor, "is making California famous the world over." The spirit which has inspired diverse and extended productions about Oroville and other Butte County sections also led to the gathering together of these products in a great exposition. This exposition was visited by residents of almost every county in the state and all were impressed with the extent of the citrus and olive industries.

IRRIGATION CONGRESS.

California failed to win acceptance of its invitation to the irrigation congress to hold its next meeting in this state. Salt Lake City proved more attractive. The officers elected at Chicago for the next year are: President, United States Senator Francis G. Newlands, Nevada; secretary, Arthur Hooker, Chicago; foreign secretary, E. McQueen Gray, Albuquerque, N. M.; first vice president, R. Isinger, Spokane, Wash.; second vice president, J. B. Case, Abilene, Kans.; third vice president, John Fairweather, Fresno, Cal.

The sessions proved of sufficient interest to hold the usual throng attending the deliberations of the congress. One of the principal discussions was regarding the financing of irrigation enterprises which have more worth on paper than in fact, and a resolution was adopted urging the states to appoint commisisons to investigate the prospectuses and claims in the literature of all irrigation and mining projects undertaken. There were many noted speakers present.

POULTRY SHOWS

The Cultivator gives considerable space this week to accounts of poultry shows from San Diego to Tehama County. The biggest of all was held at Petaluma, the White Leghorn city, perhaps the greatest poultry settlement in the world. Petaluma has not been especially strong in pure-bred poultry. While the White Leghorn has been by long odds the favorite, yet but few of the ranches there made any effort at keeping pure breds. More recently, however, the worth of blood is being appreciated and good blood is winning out. Of all the big poultry shows of the past this year's was the greatest. The engraving on the cover gives something of an idea of the appearance of the show.

Oroville made an effort in the poultry show line, making a fine exhibit the same week as its more noted Citrus and Olive Exposition. The shows at Escondido and Corning were not so large but both were aids in convincing the producer of the worth of blooded stock.

$8,417,000,000.

For the first time in many years the total value of farm products shows a decrease from the preceding year. The figures given at the head of this article represent in round numbers the estimated farm product valuation for 1911. This is $277,000,000 short of the total for 1910. The loss is chargeable to the general class of animal products and animals sold and slaughtered. Dairy cows are the only animals which have increased in total valuation. Even eggs, wool, butter and poultry have decreased. The loss to animal industry alone is about $321,000,000 over the preceding year.

Corn is by far the leading crop as a wealth producer; the estimate for the year is 2,776,000,000 bushels. That total has been exceeded by only two years. The farm price for corn is now greater than at any time since the reports of the department have been kept. Its valuation is more than twice that of cotton and but little less than the combined values of cotton, wheat and oats. Three-fourths of the world's corn crop is grown within the boundaries of the United States.

STUDY FINANCE.

Mr. David Lubin, representative of the United States at the International Institute of Agriculture at Rome, is investigating as to farmers co-operative banks which are proving remarkably successful in Germany. These are known as the Raiffessen banks, and during 1909 did a business amounting to about 6,500,000,000 marks, or something over $1,600,000,000. This immense volume of business was done without mortgages and at an interest rate to the farmers of about five per cent. It was all done by the farmers themselves and should be a hint to American farmers that they may profitably study finance as well as the science of farming. In a letter Mr. Lubin suggests that it is an opportune time for the Republican party to incorporate in its platform a scheme offering a similar system in the United States. Sure it is the two larger political parties are both in need of the farmer's vote. There seems to be general uneasiness as to results of the next election. If our farmer friends take the initiative in some needed changes in the financial system of the country, it is very probable great benefit will accrue. The trouble is too few of us who have to do with soil culture are competent to discuss intelligently great questions of finance.

FARMERS OF 40 CENTURIES.

Those who attended the soil convention held in Los Angeles some months ago, will recall that in the talks of Dr. F. H. King, he referred often to the rigid economy practiced in soil conservation in China, Korea and Japan. He made striking comparison between the methods of saving every particle which would add to the soil's fertility with the American's wasteful methods.

At that time the Doctor was writing a book descriptive of methods in use in the Orient. As is known to most of our readers, Dr. King's work was ended a few months ago by death, but it seems that this particular work was so near completion that the book has been produced and is now offered by Mrs. King. Her address is Madison, Wisconsin.

As Dr. King says: "The Chinese farmers have reached the 'root of the matter' in a thousand ways during their centuries of experience where, because of the great density of population a failure in crops invariably spelled famine and death. They were compelled to get there and stay there and they did. The American farmer is beginning to realize that the soil is a thing that must be handled with care if it is to produce a living for his grandchildren."

We have not yet seen a copy of the book, but doubt not its seventeen chapters and 248 illustrations largely from photographs by the author, will have most intense interest.

SUGAR BEET PRICES.

Following the effort of California sugar beet growers to secure a small advance in the price of sugar beets, and which was only partially successful, comes word from Washington that the House special committee investigating the so-called sugar trust, heard testimony designed to show that a reasonable profit from the sugar beet crop cannot be had today unless there is an increase in price per ton delivered to the sugar mill. The farmers attending the sessions of the committee give information that contracts between beet farmers and sugar refineries were drawn to compel the farmer to violate them as soon as the beet crop was planted. For example, one stipulation in some states is "The farmer must protect his beets from sunlight and frost." Another charge also made was that in some states the sugar trust has such power over the experiment stations that a fair test for the sake of checking up reports of the sugar company cannot be had. Representative Fordney said, "The company has such influence with the Colorado Agricultural Department that farmers can not get a private test." This is a serious charge against the Colorado Station which, we understand, is one of the most energetic in the United States, but if its energy is influenced by the sugar trusts, it is time for revision.

As was hinted once before in the columns of the Cultivator, co-operative sugar manufacturing is not beyond the realm of the possible. The government should not take up the manufacture of sugar, but it may well take a hand to secure justice to the producer, and if it cannot do that without encouraging an extensive co-operative movement, let that encouragement be given. We may mention, by the way, that one sugar company, the Holly Company at Huntington Beach, has broken away from the established five-dollar figure, and is now offering $5.25, or within 25 cents of the demand of the growers, made earlier in the season.

Agricultural News Notes of the Pacific Coast

Northern California

Phylloxera has appeared in the vineyards of Yolo County.

Willows hopes to have a cannery in operation before next fruit season.

Ukiah, Mendocino County, shipped twenty tons of turkeys on one day recently.

The Butte County Citrus and Olive Fair held last week was a complete success.

The Healdsburg, Sonoma County, Grange is making an appeal for new members.

The anti-malarial campaign at Oroville has ended for the season and has been a great success.

Five thousand cords of tan bark have been shipped from Humboldt Bay during the past summer.

The State Dairy Bureau is being charged with mismanagement by a former inspector who was discharged.

Fruit buds are exceptionally well developed which is assuring that next year's deciduous crop will be success-

The bean and corn crop output of Yuba County is making a record. The bean crop is running 30 sacks per acre. ful.

A conference of Forestry officials and lumbermen has been arranged and will be held in San Francisco in January.

The American Olive Co. which now has a large plant in Los Angeles, is looking for a site in Oroville, Butte County.

The greater part of Butte County's orange crop has been shipped. The growers received approximately $2.25 per box.

Dairymen of Oroville are somewhat stirred up over the strict requirements of the state dairy inspector who has been visiting them.

The Santa Rosa Chamber of Commerce is preparing for a fine exhibit of fruit to be shown at the State Fruit Growers Convention.

The largest hop transaction in Sonoma County is said to be that by which Mr. Peterson of Santa Rosa was paid $90,000 for this season's output.

A sub-tropical garden is to be established near the city of Sacramento, the object being to show that many plants thought to be too tender for that section may be grown.

The Petaluma Poultry Show held last week, brought out the biggest exhibit ever made in that section. The President of the organization is H. C. Scrutton and the Secretary H. R. Campbell.

The complaint against the flavor of Humboldt County's butter which has been charged to the quantity of turnips fed there, has led to investigation as to advisability of substituting carrots for turnips.

The forest service is anxious to dispose of stumpage on the Plumas Reserve. There is an estimated stand of 12,500,000,000 board feet in the reserve, a large portion of which is mature and ready for sale.

The prices paid for butterfat by various creameries of Humboldt County for the last month were as follows: Capital, 36 cents; Central, 35½ cents; Grizzly Bluff, 36 cents; Swift & Co., 35¾ cents; Libby, McNeil & Libby Co., 36¾ cents; Sunset, 35 cents; Central Dry Milk Factory, 37½ cents.

Central California

Some Porterville oranges have commanded $4.00 a box.

Fresno County's Poultry Show was a complete success.

Fresno Nursery reports a great demand for Smyrna fig trees.

The packing houses of Porterville are rushing on oranges and lemons.

Tulare County has discovered a new and effective remedy for the thrips.

A Farmers Association has been formed at Patterson, Stanislaus County.

The Visalia Co-operative Creamery is elated over the receipt of a medal from the State Fair.

Fresno packers have succeeded in hammering the price of raisins to 3⅛ or even 3 cents.

One Exeter, Tulare County, olive grower has realized $500 per acre from his olive trees.

There are now five certified dairies in California, and Patterson, Stanislaus County, wants the next.

The Kerman alfalfa meal mill ground over 5600 tons within the past season. It paid the growers $40,000 cash.

The Dairyman's Association of Kings County is taking the initiative in organizing similar associations over the state.

Effort is being made to help along the formation of the Raisin Exchange. The latest feature is the formation of a promotion committee.

No plague infected rats have been found in California since 1908, but the state will take up a renewal of the rat fight in the near future.

Raisin growers have it in for food expert H. W. Wiley because in his model Thanksgiving dinner he omitted raisins from the menu.

San Jose Chamber of Commerce is taking up a suggestion for establishment of a branch of the Davis Agricultural School in the vicinity of San Jose.

Prunedale is claiming better prices for its Newton pippins than growers around Watsonville are receiving. It is claimed to be largely because of superior pack.

Orange shipments are keeping packing houses at Porterville, Lindsay and Exeter very busy. Some growers report as high as 75 per cent of fruit in the fancy grade.

Clovis raisin producers are appealing for the present legislature in special session called, to enact some law providing for the standardization of all California fruits.

Inspectors from the Pure Food Commission are observing packing methods in the Tulare County citrus section and it is thought a modification of the green orange ruling may be secured.

At a recent meeting of the organizers of the California Raisin Exchange at Fresno the following board of directors was selected: Judge M. K. Harris, H. H. Welsh, A. G. Wishon, D. L. Newman and W. R. Nutting.

At the recent annual meeting of the Farmers Union at Modesto a resolution was passed recommending the employment of white labor exclusively and urging the fixing of vacations so that public school pupils may be allowed to work in the orchards.

Southern California

San Bernardino is to have an incubator factory.

National City is to have another fruit packing house.

Southern California walnut growers are holding firmly for 14 cents.

Rialto orange growers propose to jail orange thieves in the future.

Orange County celery growers are finding this the most successful season.

Antelope Valley shipped many tons of turkeys to Los Angeles for holiday trade.

One walnut grower at Oxnard reports several tons of walnuts from 110 acres.

The whole state seems to be awakening to the profits in olive oil and pickles.

The San Bernardino Chamber of Commerce is exhibiting a 150 pound squash.

The Holtville Cooperative Creamery is paying over $2000 a month to its members.

The Tri-Counties Reforestation Committee is opposing the Water Commission bill.

Lima bean prices are soaring. The Ventura County Association still holds about 50,000 sacks.

The Holly Sugar Co. of Huntington Beach is contracting to pay $5.25 for next season's output.

County Veterinarian Rowland of Los Angeles, reports occasional cases of glanders in that county.

Prof. Lipman of the State University made an address before the Covina Farmers Club last Saturday.

The thirteen packing houses operating at Redlands will put out over 100 cars of oranges for Christmas trade.

Visitors who have returned from the land show at New York say that the California orange exhibit was magnificent.

Irrigators on the Ojai Road in Ventura County have been warned to stop letting their irrigating water run into the gutters.

Improvements in the main canal of district No. 5, Imperial Valley, will bring about 2000 more acres of land under irrigation.

A rhubarb grower at San Luis Rey, San Diego County, has been in Chicago looking for a market for his product of forty acres.

A slight frost over the Imperial Valley is said to have been beneficial in that it opens up the cotton bolls and makes picking easier.

Burbank, Los Angeles County, claims to have grown a sweet potato weighing 27 pounds. El Centro claims one weighing 75. Next?

The Palo Verde Valley has organized a Settlers Protective League, which will look after the interests of settlers in certain land contests.

L. R. Glavis, at the head of the State Conservation body, is looking after the state's interests in Southern California as to certain water power possibilities.

Santiago Orange Growers Association at McPherson, Orange County, shipped out a car of Thompson Improved navels for the Thanksgiving market. The Thompson Improved are earlier in coloring than the Washington navels.

The Coast

Oregon potato growers are holding tubers for a high price.

Most of the Idaho apples have now gone into cold storage.

Poultrymen held an exceptionally fine show at Salem, Ore., last week.

Farmers at Wilson Creek, Wash., are opposed to state highway building.

Fallon, Nev., will have a sugar factory in operation for next season's crop.

An apple grower at Boise, Idaho, has invented an apple grading machine.

The Oregon Agricultural College has issued a circular on gumosis of cherries.

A Camas, Wash., turnip grower has a specimen 19½ pounder, 33½ inches in circumference.

Fall planting of apple trees at Nampa, Idaho, has been more extensive than usual.

Hood River, Ore., is appealing for canning and drying plants which will handle cull apples.

The annual meeting of the Oregon Dairymens Association was held at Portland last week.

Farmers near Portland, Ore., are appealing for the creation of a state agricultural commission.

Angora Goat breeders and poultry raisers of Polk County, Ore., will hold a joint show at Dalles, Jan. 3-5.

Moscow, Idaho, is elated over capturing the sweepstake prize at the recent Spokane Apple Show.

The Pacific Northwest Livestock Show will be held at the Portland Union Stock Yards March 18-20, 1912.

Owing to a campaign for cleanliness, dairies near Portland, Ore., are said to be in the pink of perfection.

Lewiston, Idaho, is actively preparing for the meeting of the Northwest Livestock Association in that city Dec. 12-14.

Farmers at Echo, Ore., are in arms because of a large irrigation scheme which will store water and submerge their farms.

In a Portland, Ore., law suit the court made a ruling that a "sack" of potatoes shall be legally considered as 100 pounds.

A woman apple grower at Yakima Valley won $500 in gold for the best 25 boxes of apples in the New York Land Show.

A potato grower at Goldhill, Ore., claims to have a new tuber which will produce well in dry seasons and without irrigation.

At the recent Walla Walla Fruit Growers Convention a committee was appointed to effect a suitable marketing organization.

The Oregon Poultry and Pet Stock Association Show being held this week at Portland has an entry list of over twelve hundred birds.

White farmers near Gresham, Ore., are concerned over the great number of Jap gardeners and farmers who are securing possession of land.

Agriculturists of Mindanao, P. I., are urged to devote part of their acreage to rice culture. The land is said to be well adapted to rice growing, but at the present time the entire crop is purchased from outside the island.

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CO-OPERATIVE CREAMERY.

Being requested as to steps to take in the formation of a co-operative creamery, we have written to several qualified to answer such a question, and from Mr. Leon M. Davis, connected with the University Farm at Davis, we have the following:

"In reply to question as to whether these creameries are practical or whether they have generally succeeded, I will say that co-operative creameries are a success if under competent management. The only cause of failure in such concerns is the fact that the management is left to some stockholder whose knowledge of the creamery business is very limited. Especially in California, it is necessary that an experienced man be in charge of every creamery on account of the keen competition. I am going to refer you to Mr. W. B. Thurston, 407 Postoffice building, San Francisco. He is the Federal dairyman for this section of the country, and he is able to spend time with any dairyman who contemplates the establishment of a co-operative plant. Mr. Thurston is maintained by the U. S. Dairy Division and his services will be given entirely free. It will be necessary that he be requested to take up this work, as his services can not be given unsolicited."

Mr. J. P. Murphy, manager of the Dairymen's Co-operative Creamery at Tulare, writes:

"The first thing to be considered is the number of cows within a distance accessible to the creamery—two thousand being the least number to support an up-to-date plant.

"Second. Draw up a preamble or contract that is thoroughly legal and absolutely binding, secure the signatures of as many dairymen as possible who wish to join the association—from those signed up, elect five directors. The directors may then appoint a committee to draft constitution and by-laws.

"The next important move is to secure the services of a thorough creamery man as manager, the best man is none too good.

"The cost of the plant depends entirely on the capacity, style of building, machinery, etc. Our plant cost about $20,000, handles the product of 7000 cows—making over 4000 pounds of butter daily. The plant has been a most decided success with all patrons well pleased."

Mr. Murphy adds:

"The writer has been a creamery manager for over twenty years and during that time has had experience in co-operative creamery plants as well as privately owned creameries. We saw the co-operative creamery come into existence in California some twenty years ago—they sprang up in large numbers—seemed to be a success for a while, but any man familiar with the creamery business could see nothing in their future but failure.

"The co-operative creameries of those days were not started on substantial lines. Cheap buildings were erected, cheap machinery installed with no definite plan in view and the time was not long passing when the plant had to be overhauled—new machinery had to be purchased and the expense of the numerous mistakes that were made bore heavy and caused dissatisfaction and rancor among the dairy farmers.

"Then came the advent of the privately owned creamery commonly called the centralizer. It is needless to say that the co-operative creamery fell an easy prey to the shrewd business methods of the centralizer and one by one they sold out, burned down or went out of business, and the dairy farmer was much poorer and some wiser for his experience.

"Some few of the co-operative creameries that were started as long as fifteen years ago have survived and their existence is due to the fact that they were fortunate in securing a man as manager who knew the business and kept up to the times. The money that has been lost by hiring cheap, incompetent help in the creamery would build anew all the creameries in the state, and even to this day there is unnecessary waste of butter fat.

"But at last the co-operative creamery has come into its own. No longer is the dairy farmer, who put up his share of the money to build a co-operative creamery plant, shivering in his boots in fear that the amount he has invested is in danger of being lost—he fears not the keen competition of the centralizer, for he has learned that he and his neighbors with the help of a competent manager can run their own business without contributing a good portion of the profits of the dairy farm to private creamery owners.

"The dairy farmer is learning more about his own business as each day passes, taking better care of his product, putting his farm in a more sanitary condition, looking more closely to the improvement and health of his dairy herd, and taking a greater interest in his co-operative creamery, for he has learned that here is where the undivided interests of the farmer meet success."

ICE CREAM.

Twenty-five years ago a few far-sighted men induced Congress to provide for agricultural experiment stations. It is doubtful if any of them were long-headed enough to imagine that one of these stations would ever issue a long and scientific bulletin on ice cream. The Vermont Station has done this very thing in Bulletin 155, and it will rank as one of the most interesting and useful publications of all the stations. You probably do not realize it, but the ice cream trade is revolutionizing dairying in many places. The American consumer pays $150,000,000 every year for ice cream, and the demand has grown so that the entire product of many creameries has been taken from butter making and sold to make ice cream. In some cases the ice cream is made right at the creamery and sold as such. The comparative profits are figured about as follows: Take 100 pounds of cream, testing 18 per cent fat. This will make about 21 pounds of butter worth about $5.90. The same cream when properly mixed and frozen will "swell" to 20 gallons, which at 80 cents, means $16 or $15, deducting the cost of sugar. As butter the fat brings 33 cents a pound, as ice cream 83 cents. Quite a margin, you see, and thus far a few large manufacturers have bought the cream and worked this margin into their own pockets. There is little reason why some of this ice cream should not be made right where the

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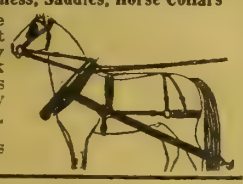

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cream is separated. This bulletin tells exhaustively how it may be done, and does the job so well that it is deserving of high praise. Many interesting things are stated. For example, melted ice cream is mixed with a little skim-milk, soured and churned into butter! We also learn that "homogenized cream" is a new proposition. It is subjected to a pressure of 3000 to 5000 pounds per square inch. This so breaks up the fat globules as to prevent all cream from rising, the separator cannot get all the cream and it cannot be churned. It is possible with this process to make a fake milk or cream of any grade by reuniting unsalted butter and skim-milk! The ice cream trade is having a great influence upon the dairy business. It ranks in importance ahead of cheese and only second to butter. As it grows it is sure to influence the price of milk for butter making.—Rural New Yorker.

DAIRY HERD INSPECTION.

All herds from which a clean milk supply is desired should be frequently inspected by a competent veterinarian. Such inspection will prevent contamination of milk with many of the germs that are most dangerous to the human consumer, because these are derived from diseased cows.

Prevention is better than a cure, so inspection of cows is much more valuable than a laboratory inspection of the milk.

The milker should be clean. Before milking and before putting on his milking suit he must wash his hands with warm water, soap and a nail brush. The milker's hands should be washed before milking each and every cow. Starr's experiment station reports that 45,000 bacteria were found on the hand of an ordinary farm worker; about 98 per cent may be removed by washing.

A clean suit should be used, and must not be worn at any other time than at milking. It should be made of a washable material and should be changed at least twice per week.

Milk pails should be of smooth metal like heavy tin. Galvanized iron or any rough metal should not be used, as germs collect much more easily and they are more difficult to clean. In fact, all utensils should have the seams covered smoothly with solder. When the milking is done in a clean manner, strainers are of little use, but cheesecloth of the finest meshes doubled with a layer of absorbent cotton between the layers should be used.

No part of the dairy work is more important than the cleaning of milk utensils, or is so strongly emphasized that dairy utensils must, after the milk is thoroughly cleaned from the surface with warm water, be scalded with boiling water, or preferably steam. Nothing short of this will insure clean milk.—Dr. E. F. Jarrell in American Cultivator.

There is more profit in keeping one extra good cow upon the farm than sixteen scrubs. Her offspring is of much more value, her milk and butter products of finer quality, and her keeping just as nominal as of one scrub cow which produces but a dollar or two of profit, if any at all. The day of the scrub cow in the well regulated dairy is past, and these same unprofitable animals are fast passing from our farm dairies as well.—Geo. W. Brown.

Cleaning up manure and filth about the barn, and keeping rid of all rubbish and decay, will cause the flies to seek other carelessly kept barnyards. They only hatch where filth and dirt prevail.

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Escondido's Maiden Effort

San Diego County's Poultry Center is Proud of its First Show

The first annual show of the Escondido Valley Poultry Association was pulled off at Escondido, San Diego County, last week. The weather man showed his antipathy for the event by giving some exceptionally wet weather at the opening, but enough sunshine was granted finally so that the attendance proved very satisfactory. As to the quality of the birds shown, it was indeed a credit to the Escondido Valley. Rocks and Orpingtons were both exceptionally strong classes. Wyandottes were not so freely shown but some fine birds were on exhibit. The boys are determined to make another year's exhibit still better and to take advantage of the interest created by this showing to extend the belief in pure bred poultry over a greater range of San Diego County.

Corning Poultry Show

Tehama County's Exhibit Not Large, But of Fine Quality

The second Annual Poultry Show at Corning, Tehama County, has become history, and those who were responsible for the show have a feeling of satisfaction that such a successful exhibit has been made. It cannot be called one of the big shows of the state, as there were only 350 entries, but the fine grade of stock exhibited was a credit to the Tehama County poultry raisers. In the matter of quality, the Show was said to be far superir to that of last year. The judging was by A. H. Currier, a fancier of Santa Rosa. The attendance every day was satisfactory to the management and the exhibit closed with the determination to make next year's bigger and better. The officers elected are: George F. Atkins, president; Walter C. Smith, vice president; E. L. Randall, secretary; K. H. Cressman, assistant secretary; F. R. Close, treasurer.

Show Committee—W. C. Smith, F. R. Close, T. J. Moffit, W. B. Woodsoon, K. H. Cressman. Superintendent of exhibits, Will Atwood..

Oroville's Money Makers

Butte County Invites all the Sacramento Valley to Take Away the Prizes

With 750 of the aristocracy of California pure bred poultry in their proudest feathers proclaiming their own merit at the Oroville Poultry Show last week there was much to impress the throng of visitors from all parts of the Sacramento Valley that the North is some on blue blood. It was a fine show. The first of its kind at Oroville, but an inspiration to the lover of pure-bred stock.

The show was held in connection with the great Citrus Fair, so that the whole city was dressed in her best and with bunting and lights everywhere.

Nearly every class was well represented, and notwithstanding the Petaluma Show was held the same week, Oroville drew its share of fine stock.

MARKETING POULTRY.

"Trifles make perfection, but perfection is no trifle" is an old saying well worth remembering when you get ready to sell poultry. After a week or so in November it pays better to sell dressed poultry rather than live. Old hens usually bring the best prices in the early fall and winter, while old roosters do not pay for the labor and cost of sending them to market. In selling off the stock in the fall send only the small stock and the fat hens that do not lay. Old hens sell as well as pullets. The main point is to have them fat, as that covers all other defects provided they are healthy. Another important point is to dress them neatly. A neatly dressed fowl even if it be small, will always sell more readily than a large one with half of the feathers on, and bruises here and there. The keeping quality is greatly improved if the crop and intestines are empty, hence they should receive no food for 24 hours before killing. Bleed the fowl through the mouth. This is done by suspending it by the legs and with a sharp knife cutting across the mouth just below and under the eyes, in this way severing the jugular vein. A half minute will be all sufficient to bleed and when the bird begins to struggle, give it a smart blow on the back of the head and begin the picking at once. Most of the western markets prefer dry picked, while for many of the eastern markets it is immaterial, and there the prices often do not vary between dry picked and scalded. During the molting season, young stock will look and pay about as well if scalded as if dry picked. This should be quickly done in water nearly up to the boiling point, then pick perfectly clean, dip immediately into very hot water and then lay in cold water for fifteen minutes. If a little salt is added to the water it will draw the blood out of the skin. Many good chickens are spoiled by being packed before they are thoroughly cooled. Care should be taken that all the animal heat is out of the body before the fowls are packed. A bird with white flesh and skin is preferred by many markets to that with yellow. The color can be influenced considerably by the feed. Oats and skim-milk have a tendency to make them light colored. The farmer or poultry keeper who is in a position to do so will realize the most money out of his flock by selling direct to consumers and especially when this can be done a flock of one variety will command a better price than a flock of different varieties.—Kimball's Dairyman.

STIMULATING LAYING.

Hens should not be fed stimulants to promote laying, as the effects later on more than offset any gain one can make. Let the food, care and nature do such work and there will always be a supply of eggs.

It is a hen's nature to lay and, unless conditions are directly opposed to nature, they will lay. Stimulants of any kind rouse the system to action, but in time the after effects more than offset any good that may temporarily be gained. A little iron in drinking water is good, but pepper mixtures of any kind are harmful. The fowls should be much as they are in nature, and if other things are favorable the hens will lay. Hens that are covered with lice will not lay long, no matter what they are fed, so that our first duty is to free them of the pests. Small eggs may lie in a hen for months with no change if conditions are not just right, while on the other hand eggs may fully develop in ten days or two weeks if conditions and food are favorable. Breed has but little to do with laying and we can usually find the cause in some oversight of ours if our hens fail to lay as they should. Have a time to feed and feed right and you will have no complaint.—Farm and Home.

"Cull closely" is the motto that will lead to success.

LOS ANGELES POULTRY SHOW.

Great preparations are being made by the officers of The Poultry Breeders' Association of Southern California for their big show to take place at Fiesta Park, January 4 to 10, 1912. The premium list will soon be distributed. Special coops are being designed for the turkey and breeding yards exhibits, also 200 new coops for other poultry sections. One new feature of the show will be an official catalogue of awards. All exhibitors' names appear in this. The poultry will be cooped in single tiers with large alley-ways between the rows of coops. Seven judges place the awards in the persons of Wm. F. Brace, Victor, New York; Will Purdy, Ferry, Washington; H. W. Gunston, Havilah; Benj. F. Woodhull, Stockton; R. V. Moore, Oakland; Geo. W. Masterson, Duarte, and E. E. Emerson, Los Angeles. Liberal cash prizes are offered, besides ribbons and cups. Entries close Dec. 24th. For full particulars write to the secretary, Jos. E. Davis, R. D. 11, Box 148, Los Angeles.

GREEN BONE.

Generally we have from eighty to ninety chickens around the farm, and up to a few years ago I never kept track of just how much profit they added to the farm income.

I go into town about twice a week and, upon one of my trips to the butcher's, I noticed what a lot of bones he had gathered in a box, many with bits of meat clinging to them. When asked what he did with them he said he sold them to the "bone man" at a cent a pound. Then a thought struck me. Why wouldn't the lime and the marrow in those bones and the meat clinging to them be fine for my chickens?

The box of bones, weighing about seventy pounds, was bought, the butcher saying he would just as soon let me have them as the "bone man." The chickens like them immensely, but cracking and smashing bones with a hatchet for ninety chickens was more of a job than I thought, and I saw that if I was going to feed green bone to the chickens I would have to have a bone cutter. Then I hesitated. Was it worth it for my ninety chickens? However, after some deliberation I decided to take a chance on it and buy one, and I can truthfully say I have never been sorry for taking the chance.

Since using the cutter I have been keeping track of the flock's production and I have found that during the earlier part of the winter I have had an average of 1½ extra eggs each week from each hen, and during the latter part one extra one. This extra supply from each hen each week paid for the bone cutter the first winter and I have realized quite a side profit from it by renting it to the neighbors. Then, too, our pullets this year commenced laying earlier than they ever did before, and I lay it to the cut bone.

Our fowls have a good range, and each day I feed one quart of grain and one pound of cut bone for each fifteen or sixteen chickens. In the summer time I feed just the cut bone without the grain. We figured out this ration after feeding them too much a couple of times, causing them to get "off their feed" and to suffer with bowel complaint. Another time I let the cut bone get a little musty before feeding it and lost two hens.

At times I mix the green bone with a mash by way of variation, but I prefer, and I think the chickens do too, to give it to them straight. I generally scatter it in the straw litter when the weather is cold and there is a terrible scrambling among the fowls until it is all gone. The only precaution that need be taken, so far as I can figure it, is not to give too much or any that is tainted.—Farmer's Review.

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THE PETALUMA POULTRY SHOW.

(Continued from Page 609.)

Buff Minorcas—All awards, Mrs. I. H. Tuttle.

Blue Andalusian—Pen, 1, H. P. Lichau; ck, 1, Mrs. L. H. McLeod; 2, H. P. Lichau ckl, 1, 2, Vincent Huntley; 3, H. P. Lichau; hen, 1, 2, 3, Mrs. L. H. McLeod.

Mottled Anconas—Pen, 1, Chas. Holman; 2, R. J. Mott; 3, Mrs. R. P. Smith; ck, 1, Thos. A. Atkinson; 2, Mrs. R. P. Smith; ckl, 1, Chas. Holman; 2, Thos. Atkinson; 3, Mrs. H. P. Smith; 4, Mrs. Geo. Grindell; hen, 1, Mrs. H. P. Smith; pullet, 1, Chas. Holman.

ENGLISH.

Black Orpingtons—Pen, 1, Marshall Black Farm; 2, J. E. Pearson; 3, W. H. Ingram; 4, Wm. H. McKay; ck, 1, 2, Marshall Black Farm; 3, 4, J. E. Pearson; ckl, 1, 3, Marshall Black Farm; 2, 4, W. H. Ingram; hen, 1, W. H. Ingram; 2, 3, J. E. Pearson; 4, Marshall Black Farm; pullet, 1, 4, W. H. Ingram; 2, J. E. Pearson; 3, Marshall Black Farm.

White Orpington—Pen, 1, W. H. Ingram; 2, Marshall Black Farm; 3, J. D. Bennett; 4, Mrs. R. P. Smith; ck, 1, 2, W. H. Ingram; ckl, 1, 2, W. H. Ingram; 3, Little Lake Poultry Farm; 4, Mrs. R. P. Smith; hen, 1, Mrs. Bertha Hagedorn; 2, 3, W. H. Ingram; 4, J. D. Bennett; pullet, 1, 2, W. H. Ingram; 3, Mrs. Bertha Hagedorn; 4, J. D. Bennett.

Buff Orpington—Pen, 1, 3, W. H. Ingram; 2, Mr. and Mrs. W. S. Sullivan; 4, Hopland Stock Farm; ck, 1, W. H. Ingram; 2, 3, Mr. and Mrs. W. S. Sullivan; 4, Hopland Stock Farm; ckl, 1, 2, W. H. Ingram; 3, E. J. Dole; 4, Nipon Poultry Farm; hen, 1, Mr. and Mrs. W. S. Sullivan; 2, 3, W. H. Ingram; 4, Nipon Poultry Farm; pullet, 1, 4, W. H. Ingram; 2, 3, J. D. Bennett.

FRENCH.

Houdans—Pen, 1, Carl Gregory; 2, Schmidt & Gunther; ck, 1, 2, 4, Schmidt & Gunther; 3, Carl Gregory; ckl, 1, 2, 3, Schmidt & Gunther; 4, Carl Gregory; hen, 1, 3, D. H. Anderson; 2, 4, Carl Gregory; pullet, 1, 2, 3, 4, Schmidt & Gunther.

GAMES AND BANTAMS.

Black Breasted Games—All awards, Art. J. Holmes.

Silver Duckwing Games—All awards, Art. J. Holmes.

Cornish—All awards, Richard Keatinge.

Pit Games—All awards, J. W. Robinson.

Faverolles—All awards, Jack Lee.

White Pit Hornets—All awards, Wm. Hirsch.

Silver Brackels—All awards, G. B. McKinney.

Sicily Buttercups—All awards, G. B. McKinney.

Buff Cochin Bantams—Cock, 1, 2, Ben Woodhull; 3, 4, E. Lisle Keesling; 2, Ben Woodhull; 3, Henry Hoyt; 4, Wm. Hirsch; hen, 1, 2, Ben Woodhull; 3, 4, E. Lisle Keesling; pullet, 1, 2, E. Lisle Keesling; 3, Earl Gray; 4, Ben Woodhull.

Black Cochin Bantams—Cock, 1, F. A. Arnold; 2, 3, Wm. Hirsch; ckl, 1, 2, Wm. Hirsch; hen, 1, F. A. Arnold; pullet, Wm. Hirsch.

Golden Sebright Bantams—Pen, 1, Wm. Hirsch; ck, 1, 2, Wm. Hirsch; ckl, 1, 2, Wm. Hirsch; 3, John McGovern; hen, 1, 2, Wm. Hirsch; pullet, 1, 2, Wm. Hirsch.

Silver Sebright Bantams — All awards, Jack Lee.

Rose Comb Black Bantams—Pen, 1, Carl Gregory; ck, 1, 3, Carl Gregory; 2, 4, Wm. Hirsch; ckl, 1, 3, Carl Gregory; 2, 4, Wm. Hirsch; hen, 1, 3, Wm. Hirsch; 2, 4, Carl Gregory; pullet, 1, Carl Gregory; 2, Wm. Hirsch.

Light Brahma Bantam—Cock, 1, Wm. Hirsch; 2, Carl Gregory; hen, 1, 2, Carl Gregory.

White Cochin Bantams—All awards, Mrs. J. Abderhalden.

Black Tailed Japanese Bantams—All awards, Wm. Hirsch.

White Japanese Bantams — All awards—Wm. Hirsch.

Japanese Silkies Bantams — All awards, Jack Lee.

Black Breasted Red Game Bantams—Pen, 1, Henry Hoyt; cock, Ben Woodhull; 2, Henry Hoyt; ckl, 1, 3, Henry Hoyt; 2, 4, Ben Woodhull; hen, 1, 2, Henry Hoyt; 3, Ben Woodhull; pullet, 1, 3, 4, Henry Hoyt; 2, Ben Woodhull.

CAPON.

Light Brahma—Capon, 1, F. Castagna.

DUTCH.

Silver Penciled Hamburg—Pen, 1, Duncan Lee.

TURKEYS.

Bronze—Cock, 1, Geo. A. Smith; 2, Mrs. Wm. Bond; ckl, 1, Mrs. Wm. Bond; 2, 3, Ed Hart; yrlg. ckl, 1, 3, Ed. Hart; 2, Mrs. Wm. Bond; hen, 1, 2, Geo. A. Smith; 3, Mrs. Wm. Bond; pullet, 1, 2, 3, Ed. Hart; yrlg pullet, 1, 2, 3, Ed. Hart.

Bourbon Red Turkey—All awards, Salvation Army.

WATERFOWLS.

Mammoth Pekin Ducks—Old drake, 1, Wm. Hirsch; 2, Salvation Army Farm; 3, 4, A. Z. Duck Ranch; young drakes, 1, 2, Wm. Hirsch; 3, 4, A. Z. Duck Ranch; old duck, 1, 2, 3, A. Z. Duck Ranch; 4, Wm. Hirsch; young duck, 1, Wm. Hirsch; 2, 4, A. Z. Duck Ranch; 3, Nipon Poultry Farm.

Aylesbury Ducks—Old drake, 1, 3, 4, Vincent Huntley; 2, Mrs. C. H. Taft; young drake, 1, Mrs. C. H. Taft; 2, 3, Vincent Huntley; old duck, 1, 3, Vincent Huntley; 2, Mrs. C. H. Taft; 4, Nipon Poultry Farm; young duck, 1, E. F. Hopkinson; 2, 3, Vincent Huntley; 4, Mrs. C. H. Taft.

Rouen Ducks — All awards, Wm. Hirsch.

Indian Runner Ducks—Old drake, 1, 2, 4, C. E. Smith; young drake, 1, G. Mesner; 2, 3, Guy Johnson; old duck, 1, G. Mesner; 2, 4, C. E. Smith; 3, Guy Johnson; young duck, 1, G. Mesner; 2, Guy Johnson.

Toulouse Geese—All awards, Wm. Hirsch.

Embden Geese—Old Gander, 1, Salvation Army Farm; young gander, 1, Wm. Hirsch; goose, 1, 2, Salvation Army Farm.

African Geese—All awards, Wm. Hirsch.

Brown Chinese Geese—All awards, Wm. Hirsch.

White Chinese Geese—All awards, Wm. Hirsch.

Common baking soda dissolved in warm water to make a strong solution is a good wash for cleaning eggs. Soda will dissolve grease and dirt on the eggs. They should be wiped dry immediately after being washed.

There is an ever increasing demand for pure-bred poultry. Get a start this year and have some of your own to sell in the future. Big poultry profits are made largely through selling breeding stock.

As colder and damper conditions come on, look out for roup. Prevent this disease by keeping the houses dry, clean, and the sleeping birds unexposed.

THE VALUE OF DUCK EGGS.

Nearly all good eaters in England and on the continent relish duck eggs, even more than the hens' eggs.

Properly fed on sweet, clean grain, green stuff with pure water, the duck produces eggs that are delicious.

The Indian Runner duck lays better eggs than the Pekin, although the latter is in greater favor in the United States, doubtless because of its pure white color.

Pastry cooks in hotels and restaurants prefer duck eggs and some persons who have learned how palatable they are buy them, but there is a decided prejudice against duck eggs in the general market.

Duck raisers ran remove this prejudice by judicious advertising in the local papers, setting forth the advantages of duck eggs and advising as to their palatability.

The Indian Runner is almost as large as the Pekin at 10 weeks, although the latter is more heavily feathered, and this gives it a larger appearance.

Runner ducks do not need water to swim in, but should always be provided with clean water for drinking, and if this can be running water, so much the better.—Journal of Agriculture.

In constructing poultry houses it is better to build several small ones, and have them separated a considerable distance, than to build one large house. Large numbers in a flock are more subject to disease and pests than small numbers. Dividing the large flock into smaller groups gives wider and cleaner feeding grounds.

There is no economy in feeding musty grain of any kind to the chickens, even if it can be had for a quarter of the price of good grain. The fowls will eat it, if other food is withheld, but it is not good for them.

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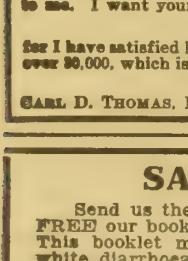

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PROSPECTS OF THE POULTRY INDUSTRY IN CALIFORNIA.

Mrs. A. Basley.

The future of the poultry industry never looked brighter or more promising than it does at present. There is no boom on, but there is a steady and ever increasing demand for poultry and eggs at paying prices. There never has been a better opportunity for man or woman with push and energy and a knowledge of the business to go in and succeed than there is at the present time in Southern California.

There are scores of successful poultry raisers in and around Los Angeles who derive a good income from one or more of the branches of the poultry business and there is still plenty of room for others to go into it if they will apply themselves to the work. It is work, not play. But in Sunny California it means a health-giving employment in the open air and a good means of securing a comfortable income.

Scores are doing it. One, a noted poultry breeder in the East, wrote me: "Can I make poultry pay in California?" "You certainly can make it pay better here than in the East," was my reply. She knew the business and all she had to do was to adapt herself and the needs of her beautiful fowls to the difference in the climate and the soil.

"The food for the fowls costs somewhat more here than in Ohio," she said, "but eggs are forty-five cents a dozen here while they are less than half that there. So the difference in the price of one dozen eggs sold to the grocer here pays more than the extra price on a whole sack of wheat." "Thanks to the climate, poultry raising is easier here than in the East. If you want to know my greatest difficulty here it was at first in keeping the fowls supplied with green feed. My available supply of green gave out and I had to have recourse to sprouting oats or barley, but now that I know the climate and I can plan ahead there will be no difficulty whatever."

Poultry breeding is a business that can be made to pay on any scale from a small flock in the back yard of a town lot to a good many thousand on a poultry farm. Egg farms and poultry farms are becoming more numerous every year and thousands of fowls are raised in the back yards of homes here. Still one of the many markets in Los Angeles has just telephoned me that they alone are now importing a carload of eggs every week and a carload of poultry every ten days. The city of Los Angeles alone consumes over six million dollars worth of poultry per annum. Where does it come from and who gets the money for it? About one-half, three million dollars of this amount, is produced by the California poultry men and the ranchers' wives and daughters. The rest comes from the Middle West.

Why should not we produce the whole of this amount? Why should not our farmers keep the three million dollars in their own pockets? Why should they let this stream of gold go to other energetic farmers, or to people who know how to manage the business? There is no known reason why the business opportunities offered by our local markets cannot be utilized by the brains and capital of our farmers in the surrounding counties with their splendid natural resources.

The wonderful city of Petaluma with its two millions of hens is not able to supply San Francisco with the eggs and poultry she needs, and the San Franciscans are importing as many if not more carloads of eggs and poultry than the Los Angeles merchants. In considering the subject one of our experts wrote me "The increasing price of beef, pork and mutton have brought about conditions which cause the thinker to look admiringly at the hen for she is the only meat producer which can be relied upon to feed the people when our country reaches the congested state of England. The selling price of a pound of poultry meat or a dozen eggs is fully three times as much as the cost of production. Therefore after taking out the interest on the investment, the cost of getting it to market, etc., there is still a good profit left for the grower."

The process of producing poultry and eggs for table use is a very simple one and can be learned by any person with ordinary intelligence. The hundreds of home seekers arriving in California may be assured that they can keep poultry profitably, for pleasure, for family use, for the market, or for exhibition.

We are frequently asked what the profits may be in poultry, or what the net income from a certain number of hens should be. The profits of any legitimate business depend largely upon the owner. Prices fluctuate and profits vary, but the amount being realized here by a man who knows how to manage hens properly ranges from one dollar to four dollars per hen. This is for commercial eggs only.

The cost of keeping a hen of the American or English breeds is about a dollar and twenty cents per year. One expert I know tells me it costs him seven cents per month. He keeps the White Plymouth Rocks. Another, a beginner, finds it nearly two dollars a year, but he buys everything in small quantities. A hen of the American or English breeds eats from 75 to 100 pounds of food per year, voids about 100 pounds of droppings (value at about 35 cents for fertilizer) and lays on an average of ten dozen eggs per year, although many do better than this.

Thus the average hen brings in for eggs fully $3.00; droppings 35c; total $3.35. Cost of food a year, $1.20; net gain, $2.15. This is a very conservative estimate.

Two very careful poultry men who have been in the business for a number of years (one of them fifteen years) told me that ever since they began they have cleared over two dollars per year per hen from commercial eggs alone.

Commercial eggs as a business is undoubtedly the easiest and possibly the most profitable branch of the poultry industry, especially for beginners. The other branches, such as broilers, roasters, capons, and old hens all have good profits in the hands of the man or woman who knows how.

Broilers bring a good price when they can be supplied in large numbers under contract. Roasters and fryers

CALIFORNIA POULTRY SHOWS.

Santa Ana, Dec. 27-30. Orange County Poultry, Pigeon and Pet Stock Association. S. J. Jackman, President.

Napa.—Jan. 4-6, 1912. Napa County Poultry Association. Wallace-Rutherford, secretary.

Los Angeles.—January 4-10, 1912. Joseph E. Davis, Secretary, R. D. 1, Box 48, Los Angeles.

San Diego. — January 12-18, 1912. The Fanciers Club of San Diego. V. Davis, Secretary.

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Meridian Road **SAN JOSE, CAL.**

always have a good market while capons are becoming more popular every year.

The fancy business breeding and raising fowls for exhibition is increasing by leaps and bounds and we may fairly claim for California the best fancy fowls and some of the very foremost fanciers in the United States. There is no need and no use in sending out of this state to get good stock. It is right here and we are sending exhibition stock back to New York, Chicago and Boston and winning the blue there. The matchless climate of the West Coast and the energy and brains of our fanciers are producing the best fowls to be found anywhere.

Turkeys bring a high price in the market here. Turkeys have been called the farmer's friend and there is no doubt that turkey raising is, in some places, more profitable than any other branch of the poultry industry, and that they bring larger cash returns than any other stuff on the farm. They cost very little to raise, they eat the waste grains in the fields and barnyards, besides the seeds of many harmful weeds. They consume immense numbers of grasshoppers, grubs, worms and insects which would otherwise greatly injure the farmer's crops, and they are not difficult to raise if they are not overfed.

There are many valleys in California where grain crops are being grown and where the turkeys by thousands might be raised on the grain which has been lost by the reapers. In the last few years this industry has increased at least ten-fold in California. Flocks of several thousand are being raised in Imperial County, herded on the alfalfa fields like cattle. They do well in that hot dry country; thousands are being raised in the Antelope and San Jacinto Valleys, in San Diego and other places, but still there is room for many thousand more, and when one considers how much may be made, and what a large opening there is for this profitable business, the wonder is that so few are raised; not nearly enough to meet the demand. Last year at Thanksgiving and Christmas, turkeys were selling at from forty to forty-five cents per pound, and were being shipped in from Kansas and Nebraska by the carload. This year they bid fair to be the same price, showing what an immense profit there is in the business. While there are no wild turkeys to be found in California except those that are being brought here by the government, the climate is excellent for the tame turkeys, and so far there has been very little disease among them. In sections of the East we read that a disease called blackhead has almost wiped out the turkeys, but here there is no need of sickness among turkeys, and I think eventually, California will supply the eastern states with their Thanksgiving and Christmas dinners.

Ducks do not seem to be as popular as chickens in California. At least there are no such large ranches here as there are on Long Island. There is, however, a wonderful outlook for them. Ducks grow faster and are ready for market earlier than chickens; they are not troubled with the diseases of the hens, neither do they have lice except when raised under a hen. When very young, before the feathers grow, the gray head lice may get on their heads, but this is before they feather out. Mosquitoes which are troublesome in some places to chickens, never trouble ducks, neither do fleas nor ticks. The reason for their immunity from vermin is that their feathers are very oily and thick, and the down under the feathers is an extra protection. Hens require a dust bath, while ducks require a water bath to keep them clean and healthy.

Most of the popular varieties of ducks can be raised and bred without water to swim in, but on the very large duck ranches, a supply of running water, so they may have fresh water to drink and a bathing place for the breeding ducks is of great advantage.

There is a good market for ducks here, and they are used extensively by the Chinese, who, if they cannot get fresh duck, use the imported smoked duck sent over from China. Ducks bring from eleven to fourteen cents per pound and still higher for what is called green duck. These are the young ducks that have been fed and fattened and made ready for the market at eight to ten weeks of age, weighing at that time from three to four pounds. All the different varieties of ducks do well in California.

Geese, like all other of the domestic fowls, can be profitably grown in California. There is always a market for them, and for their feathers. Geese are grazers. Grass, alfalfa and weeds form the greater part of their food. They do not do well on grain alone, any more than would sheep. If given a dry place to sleep in, they can live and thrive on low marshy ground suitable only for water fowls.

Goose-growing is nowhere in California carried on as an exclusive business, but many ranches keep a few for their own home consumption. There is always a ready market for them, and the prices are from fourteen to twenty cents per pound, according to the season. The present supply of good stock does not equal the demand, and any one situated favorably for raising geese, not far from Los Angeles, would, if reasonably successful, make a very good profit on as many as he could conveniently raise. The feathers always bring a high price, and many people who do not keep geese at all could do so with profit.

WHY HENS CACKLE.

My theory follows, says Breeder's Gazette: The jungle fowl of India, from which all our domestic hens are descended, lives where many predatory animals and reptiles also find their homes. The female jungle fowl for this reason seeks a secluded and safe place in which to deposit her eggs. When she is ready to produce an egg she retires to her nest and broods there for some time. In the meantime her mates have wandered away from the place where she left them. Probably several hens are absent from the flock attending to their maternal duties at the same time. When the egg is deposited the hen quietly goes to a distance from her nest and then begins to cackle in order to announce to her chief that the necessity for concealment no longer exists. The cock at once begins to cackle and the hen knows where to find the flock.

As to whether to expect eggs from your pullets this fall and winter depends upon how early they were hatched and how rapidly they have been pushed to maturity. A pullet does not begin to lay till she is mature, or nearly so, and if real cold weather comes before that time she is not apt to lay till the last of winter or next spring. If the pullets were hatched rather early last spring, and are now mature, healthy and vigorous, they are ready to start to lay. Good feeding and care will do the rest.

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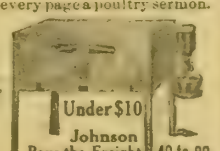

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Best varieties, in any quantity desired, at lowest prices.
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A few extra fine young toms at reasonable prices. Eggs and young poults for sale after March 1st. Now is the time to order. Write wants. Mrs. W. D. Root, 735 Verdugo Road, Glendale. P. O. address, R. D. 1, Box 105, Los Angeles.

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Pay $2 deposit now on each 100 White Rock chicks and save $4; chicks to be delivered any time you say. Genuine Fishel Strain. Guaranteed safe delivery on this deal. Write us today. Pioneer Hatchery, 112 East 8th, Los Angeles.

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Buff Wyandotte eggs for hatching, from prize-winning stock, after Jan. 1st. W. C. Parker, 113 Pacific Ave., Santa Cruz, Cal.

Barred Plymouth Rocks (Hawkins Royal Blue Strain). Cockerels, day-old chicks and eggs for hatching. Enoch Crews, R. No. 1, Santa Cruz, Cal.

Ring-Necked China Pheasants for sale. Pairs or breeding pen of four; also eggs for hatching during the spring season. Address T. D. Morris, Agua Caliente, Cal.

For Sale—Choice thoroughbred White Rock cockerels. Also eggs. Address A. G. Morley, Kern, Cal., R. F. D. 4.

Kellerstrass Crystal White Orpington cockerels for sale, 8 months old, $2 each or three for $5. B. C. Winther, Lindsay, Cal.

For Sale—A few large, strong Black Minorca cockerels. R. G. Page, 1227 W. 10th St., Los Angeles. Phone Broadway 5294.

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For Sale—Five pairs of White African guineas, $3 per pair. W. A. Grover, Hemet, Cal.

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For Sale—Thoroughbred Mammoth Bronze turkey hens of large size and fine markings, and the kind that lay early. Eggs for hatching $3 per doz. Pen is headed by mammoth tom of one of the largest and finest Eastern strains. Young stock for sale after Dec. 1st. Mrs. Nellie Hart, Holtville, Cal.

For Sale—Thoroughbred Mammoth Bronze Turkeys, both hens and toms, all ages. Also a few proven good mothers. Special price to close out entire lot. Address Quality Egg Ranch, Artesia, Cal. P. E. Santa Ana line to Coyote Station.

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For Sale—Mammoth Bronze turkeys, hens and toms; Eastern stock. Gobblers $10, hens $5, trio $18. Eggs for sale in season. Address John Carroll, Victorville, Cal.

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We have a few genuine "Rankin" strain Mammoth Pekin drakes to spare that will add a pound each to your next lot of ducks. Grand big fellows, fit to show. Price two to five dollars each. Eggs from our best pens, $10 per hundred, $2 setting. Long Beach Poultry Ranch, Long Beach, Cal

Imperial White Pekin Drakes, ten months old, $2 each. Booking orders for eggs, $1.50 per doz., $10 per hundred. H. Hinckley, Lincoln, Cal.

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GEESE

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CONIFERS FOR CALIFORNIA.

(Continued from Page 615.)

sider is good for street planting. Many believe the Sequoia to be very slow growers; this I have found to be wrong. The Redwood is around Los Angeles among the very fastest growing conifers we have, and S. gigantea if planted in a congenial soil (away from hardpan) will soon make a handsome specimen.

I have omitted the Retinosporas as being quite unsuited for general use here. The Thuyopsis can be grown fairly well, but I do not believe them to be very long lived here, and unless planted in a cool, shady position, soon become thin and sunburnt. Sciadopitys verticillata I find also short lived and inclined to become thin in a few years. There are still a few thousand I have not mentioned.

Regarding the Cedrus deodara, we may add that in the discussion after the delivery of Mr. Reeves' paper several nurserymen dissented from the view expressed that it was really Cedrus Atlantica glauca. Mr. Payne, Mr. Braunton, and others maintained that seed offered from France under the name of Cedrus deodara always produced the tree generally known as deodar. In any case it passes in the trade under that name and is a wonderfully beautiful tree.—Ed.

Bees and Their Care

HOW I FIND THINGS IN SAN DIEGO COUNTY.

By Z. Quincey, Inspector of Apiaries.

During the four years of my incumbency as inspector of apiaries it has been my pleasure to examine thoroughly 565 apiaries aggregating a little over 50,000 colonies.

The first two years I was more or less discouraged to know fully a third of the apiaries were infected with foul brood, finding from two or three to one hundred and forty-five diseased colonies in an apiary, and the latter in an apiary of one hundred and seventy-five others almost as bad, with infected combs strewn all over the ground or hanging in the honey house ready to help build up a swarm or divide, and worst of all, little co-operation on the part of the apiarists to assist in eradicating the disease. But I was determined that it should be cleaned up if at the cost of a whole apiary, which of course I never had to do. Out of the 2075 infected colonies cleaned up, I have not burned up over 300, and then only those found so late in the season that I was sure they would not survive if treated.

After the first two years I began to find apiaries previously treated were either free or nearly so from disease, then nearly every one was willing to assist. Now I can truthfully say there are not over eleven apiaries infected in the county, and those but slightly.

The past four or five seasons have been very unfavorable for a flow of nectar, owing chiefly to lack of moisture and late cold weather, especially so on the coast or up to an altitude of from 120 to 1500 feet. Above that and up to 3750 feet the flora was later; consequently the weather had settled and bees could get out to gather the little nectar secreted. A good many of the apiarists were quite discouraged, but whoever saw one wholly so? They are always living in hope that next season may prove a bonanza. The western part of the county, or what we term the black sage district, is run mostly for comb honey, the northern, eastern and northeastern portions are fitted for extracted honey.

I find a conglomeration of hives and frames, there being five different sizes. A number of our apiarists keep in touch and up-to-date with their chosen work, while others work their bees as they did 35 or 40 years ago, or let the bees work to suit themselves. My hardest lot is to try and induce the latter that a change of blood is as necessary in an apiary as in a poultry yard, and that at least half of their apiary should be requeened. They claim a queen is good until she dies, yet I may find fully one-eighth of their colonies useless and if I attempt to kill a drone layer or cripple and requeen, I have my hands full.

Another great detriment is that the majority extract too close in the fall, causing a dwindling before spring from which a great many colonies succumb. Again it seems to be an impossibility to induce the majority to stimulate and get their colonies strong for a flow of nectar. Also we insist on keeping too many colonies in one apiary. We still have fine ranges unoccupied, although isolated, where a good crop could be secured every season.

Many apiaries are not successful because bee keeping is a side issue; all the other work on the farm must be attended to first and the apiary last, if at all. I have known men to say in June, "I am glad you are here, I haven't even looked at my bees since I robbed them last season, and I am so busy I can't go with you. Just go in the apiary and mark every hive you think needs attention. I will try to put them in shape in a week or two." Do not think every one is so negligent, for I can assure you some are models, very methodical and systematic, nearly every comb being perfect. They examine their apiaries every few weeks, requeen more or less each season, build up all weak colonies, stimulate and strengthen their colonies before the honey flow. I inspected 600 colonies for one man, and a more uniform lot one could not find should he travel the world over, not a weak colony, not a poor queen, nor a poor comb, and that man always made honey.

We have no organized association and it is hard to get the bee men together as they are scattered over such a vast area. There are few apiaries located near any settlements, the land having been cleared and cultivated, so reducing the flora that there was barely a living for the bees, let alone a surplus for the owner. Therefore a great many have either sold their apiaries to men who have moved them further in the mountains or they have done so themselves, and I find by talking to them that they could not stand the expense of a three or four days' trip with team to attend an institute held perhaps 50 to 70 miles away.

AN INNOVATION IN IRRIGATION.

Originally all Southern California (like other sections of the country) was using the open ditch for irrigation purposes—with the exception of isolated cases where water pipes or concrete ditches were being tried. About eight years ago, however, two practical ranchers at Covina, California, made some concrete pipe and formed it into a distributing system—with gates to control the flow of water and outlets with valves to distribute it. This innovation in the manner of carrying and distributing water proved so practical and economical that it was at once adopted by ranchers generally, with the result that it practically revolutionized irrigation emthods throughout Southern California.

It saves water, land and labor, and will last a lifetime—concrete pipe conduits that have been in use for twenty years being today absolutely as good as the day they were installed. This system is rapidly finding its way all over the Western country—resulting in the upbuilding of an immense industry at Los Angeles, California, The Kellar-Thomason Mfg. Co., of which the original inventors are still at the head.

AN IDEAL HARROW.

In considering the purchase of a harrow it is advisable to look into the merits of those offered. Up to date farming demands the greatest possible conservation of time and energy, and when anything in the farm implement line shows a saving in these particulars it is certainly worth considering.

A real, modern harrow is now made and offered to the readers of The Cultivator by the Chilson Automatic Plow Company. You can see an illustration of the harrow in this issue. It is well made from seasoned oak, and the pins are thoroughly tempered. But, aside from the rigid and perfect construction, it is automatic in operation and does not require the exercise of great strength in handling it. A pressure on a foot pedal is all that is needed to lift it from the ground, at which time it cleans itself. You ride this harrow while working.

This implement is appreciated by those who know the value of a machine of this kind. It will pay you to write for further particulars to the manufacturer.

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What other Christmas present costs so little and means so much as a subscription to the Youth's Companion—52 weeks for $1.75?. It is a gift which benefits not only the one who receives it, but every member of the same household.

The one to whom you give the subscription will receive free the Companion's Calendar for 1912, lithographed in ten colors and gold, and you, too, as giver of the subscription, will receive a copy of the calendar.

"Nothing like it has ever before been invented," is what the manufacturers say of the automatic cream separator, crankless and gearless. "Separates milk perfectly faster than ten men can milk it. It is simply started when milking begins and it does the rest." It is promised that it will run for hours without the slightest variation, and some go so far as to say that it will revolutionize the business. This invention is handled by the Arnott Co. of Los Angeles. Dairymen should get next and ask for the "Story Without Words." The address of the Arnott Co. is 112-118 South Los Angeles St., Los Angeles.

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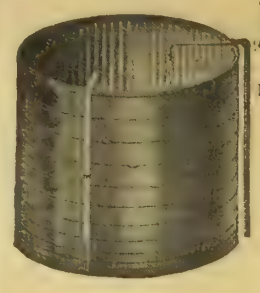

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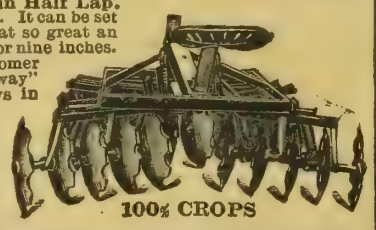

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Questions and Answers

THE EDITOR AND STAFF

Trespassing Poultry.

I noticed in a recent Cultivator a notice regarding an article regarding trespassing stock. Does that law apply to poultry and does one with a garden have to fence against them or allow them to destroy the crop?—Subscriber, Exeter.

Unfortunately under the present state law unless one surrounds his place with a "substantial fence" no damage can be collected because of trespass. As to what constitutes a substantial fence we believe there has been no decision. We do not think it necessarily means a chicken tight and chicken high fence. The estray law still stands and stock which is trespassing may be taken in charge and placed in the pound.

Horse for Farm.

What breed of horse is best for general farm work; also best to raise for market purposes?—Subscriber, Tulare.

The best breed to use upon the farm, of course, depends upon the circumstances and work required. For general farm work with an occasional drive to town the medium weight American horse is perhaps the best. If a driving team is possessed then the work on the farm might be more economically accomplished by the use of a heavy draft team such as the Percheron, Belgian, Clyde or Shire. As to which would be best to breed for profit we are uninformed. If numbers now in the United States indicate, the favorite is the Percheron. The best way is to consult the market to be supplied and get the information at first hand.

Co-operative Creamery.

A subscriber recently requested information as to steps to take for the formation of a co-operative creamery. We would refer to an article under that head in the dairy and livestock department of this issue.

Leaf Cutter.

A subscriber recently sent us rose leaves with circular pieces cut from them. The leaves were forwarded to Prof. H. J. Quayle at Whittier, and he writes:

"The rose leaf from Lakeside indicates the work of one of the leaf-cutter bees, belonging to the genus Megachile. This insect, while it does occasional conspicuous damage to the rose, never becomes important enough to warrant doing anything in the way of control measures. The insect makes tunnels in the pith of plants and cuts out these uinform pieces of rose leaves for the purpose of lining the tunnel and separating it off in definite nests, in which an egg is deposited, together with pollen for the issuing larva to feed upon. I do not know whether the bees actually eat some of the substance of the leaf in the operation or not, so that we are not sure that a poison spray, which would be a possible remedy, would be at all effective. I shall not, therefore, suggest any treatment, for I know of none that is practical or satisfactory."

Stick Tight Fleas.

A correspondent at Valley Center sends the following:

"Let me tell you how these pests can live in a chicken yard. The chickens may be well-fed and some may look well and seem well, but there is negligence on the part of the owner generally about keeping the house and yard thoroughly clean. Now I can tell you how to rid your fowls of the stick-tight fleas. First get a 5-gallon can of distillate and one also of crude oil, costing 50 cents each per can. Mix equal parts, stirring thoroughly; then spray the hen houses and small pens thoroughly and then dig up the ground over which the hens run, and this repeated once in two weeks will rid the yard of these pests.

"To get them off the poultry, each fowl should be caught and closely inspected and cleansed by using distillate on their heads where the fleas stick. This should be repeated at least once in ten days until the fleas are destroyed. Ridding the soil by stirring it well is most essential, because they breed in the dust and dirt and thrive mostly in a very dirty yard. I have seen some experience in this treatment for all lice and mites and fleas on chickens."

Stock Beets, Etc.

Are stock beets with some grain good feed for brood sows? Can cotton seed meal in small quantities be fed with safety, mixed with rolled barley, to horses? Is Kaffir corn equal to cracked corn or feed meal for hogs, stock beets being the staple with a little alfalfa? At what age is a boar fit for service, also bull calf, both pure bred.—Subscriber, Riverside.

Stock beets are excellent feed for stock hogs. The flesh is softer than grain fed animals, but for breeding stock this is an advantage. The young are born more vigorous and the sows have abundance of milk. I cannot think of any food I would rather have an abundance of than beets for breeding sows and the young shotes. Feed some alfalfa hay with the beets, and the pigs will grow like weeds. Gebek writes a bulletin in which he gives as a successful ration for draft horses a mixture of two pounds of cottonseed meal mixed with oats and corn. I presume he gives two pounds as the desirable amount to use daily. There is always danger in overfeeding with these concentrated rich foods. I would begin to feed cottonseed meal by using half a pound daily in the ration of rolled barley, shortening the barley up three times as much in quantity as the cottonseed meal is used. The proportions that are safe with linseed meal we have found to be two pounds to eight of rolled barley. I would not make a mixture any richer than that for any animal. In feeding Kaffir corn equals barley rather than Indian corn. It is a litle under the best barley, and when used with alfalfa hay it is not quite as perfect chemically in balance as corn with alfalfa. I think, however, it feeds out to cows and hogs a little better in the way of increase in fat than rolled barley. The stock are fond of it, and that may make a difference. Service means quite a different thing on different farms. If the boar is well fed at six months old he can be used for a sow a week without injury. A ten months old bull will also be used for six to ten cows not oftener than once a week. I would not exceed six. These animals must be well grown and well fed to do this safely. I prefer older ones, but when one has only a few head it is rather necessary to use them sooner. A yearling boar and a two year old bull are ready for full service.—M. E. S.

Seed Production.

Will it be profitable to raise garden seeds for market on ten acres? What kind of seed is there any money in? Also, would it be necessary to contract with wholesale firm, or dispose of them on my own account?—Subscriber, Stanislaus County.

Seed growing is a science, and one should not enter into it extensively without very thorough knowledge. To produce ten acres of some garden

seeds would require considerable capital. As to what variety to produce, it would depend upon the section. Presumably the production which does best in one section would also be a profit bringer in the production of seed. Stanislaus County has been a great producer of watermelons, also of sweet potatoes. This possibly offers a hint. The California poppy seed is also popular. As to what would give the greater profit we cannot answer, for that may be best determnied by correspondence with large seed concerns which make a business of disposing of the produce. We would under no circumstances enter into seed growing without having secured a market in advance.

Alfalfa Between.

I have a piece of land in Owens Valley now in alfalfa. I wish to plant apples. What preparation will be necessary to get soil ready for trees? If I plow a strip say eight feet wide and harrow down thoroughly, will that be sufficient? I wish to grow alfalfa between the tree rows for a year or two.—Subscriber, Salinas.

Our preference would be to deeply plow the entire alfalfa field and prepare the soil thoroughly, yet we realize where a good stand of alfalfa is on the ground the temptation would be strong to secure the income, and if water is in sufficient supply it may be done without material injury. It must be borne in mind that alfalfa takes considerable fertility from the soil. We appreciate that it is a legume and is sometimes credited with "enriching" the soil, but a crop which allows the removal of five to ten tons per acre per year is certainly taking fertility from the lower depth, being a deep rooter, but so do apple trees, so unless this alfalfa is fed on the place and fertility returned, soil exhaustion will come quicker than if no alfalfa is grown. If we were to plow in strips we would plow two rows at a time.. That is, instead of back furrowing or dead furrowing, we plow one way on one row, then back on the next. This leaves the land more level.

Alfalfa Tea.

In an issue of the Saturday Evening Post, I think during September, there appeared an article by a large and successful hog raiser in Montana or Wyoming, in which he wrote of the value of "alfalfa tea" for pigs. Can you tell us through the Cultivator what alfalfa tea is? How is it prepared and fed to pigs? Is it a substitte for milk?—R. W. C., L. A.

Mrs. Sherman answered a similar query about a year since as follows: Prepare alfalfa hay tea by putting hot water on a quantity of alfalfa leaves. The floor of the barn mow has plenty of loose leaves that are good for this use. We usually allow a two quart can full of leaves to each gallon of water. Steep it the same as any other tea. We prefer to use barley with it, as the wheat bran is too much on the protein order to work as well with alfalfa hay as rolled barley. This is cooked into a mush. Bring it to a boil and then bury it in a hay box so that it will cook all day. If one pint of rolled barley is cooked in a full quart of water in a tightly closed can the mass will be mush. To each quart of the hay tea add at first a teacupful of milk and a teacupful of the mush. Gradually drop out the milk and increase the tea to cover the amount withdrawn.

Catching Gophers.

Have tried traps and poison for gophers. Would now like to ask if carbon bisulphide applied as follows will be effective: Where there are fresh signs of dirt but the hole is so big that it cannot be found, pour an ounce of carbon bisulphide and cover it close with dirt, that is, will the fumes keep on going down and destroy the gophers?—M. E. F., Goshen.

We think not, and would prefer traps and poison. The pests sometimes pack their holes for some dis-

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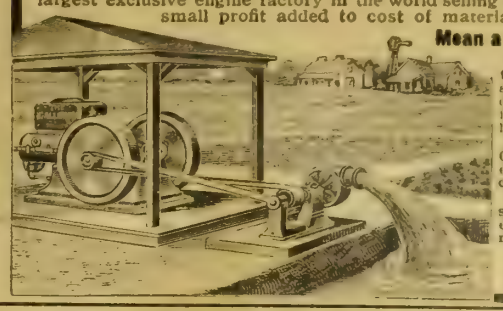

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A combination of Galloway Engine and Galloway Centrifugal Pump means ideal equipment at a great saving in price as compared with competitors' prices.

Write us for full information. We have a special department for irrigation work with experts ready to work out your requirements.

Wm. Galloway Company
1455 Galloway Station, Waterloo, Iowa

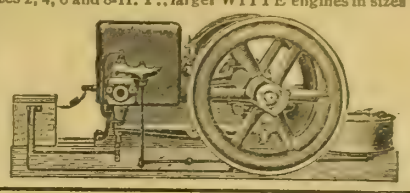
ONE CENT

AN HOURS WORK ONE CENT!

That is the average cost per horse power hour when doing the work with a WITTE gas, gasoline, distillate and naphtha engine. Why pay 25 to 50 cents per hour for one hired man when for **one cent** the **work** of **several men** can be done better and quicker. You can do the work just when you want to and **ninety-five per cent of the money you are now wasting** then goes into your own pocket. We ship every engine complete with all instructions, nothing is lacking, simply put in fuel and water and it is ready for work. You take no risk for WITTE engines are good engines. They **"stay good."** That is why we can give you a

FIVE YEAR GUARANTEE

The WITTE JUNIOR is built in sizes 2, 4, 6 and 8-H. P.; larger WITTE engines in sizes 10 to 40-H. P. Spend **one cent** for a postal card, **state the size engine you need** and let us send you our new free catalog with the best proposition ever made on this "money-saving" engine. A **special inducement** to introduce in new localities.



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503 Market Street
SAN FRANCISCO

Harrow While You Plow

Put your ground in perfect condition for planting at one operation — by using the Racine Rotary Harrow Attachment for Plows. Readily attached to gang or sulky plow. Follows the furrow and cuts, packs and smooths the soil, keeping in moisture and leaving no ridges.

You know that the best time to harrow is immediately after the plow has turned the furrow—before the sun and wind have a chance to dry out the soil. That means — harrow while you plow. But you must get the right harrow if you want best results.

THE cutting blades of The Racine Rotary Harrow Attachment for Plows are curved. They cut throughout their full length—not simply at the point. Positively cannot clog or wind—self-cleaning. Bury the trash and litter well under the soil instead of dragging it around to the surface as do ordinary blades. If your dealer can't supply you, write direct to us for handsomely illustrated circular. Find out about this big labor-saver—today. A postal will do.

ARNOTT & COMPANY
Los Angeles, Cal.

REPORT OF THE CONDITION OF

The First National Bank of Los Angeles

AT CLOSE OF BUSINESS DEC. 5, 1911

RESOURCES:

Loans and Discounts		$13,205,513.22
Overdrafts, secured and unsecured		49,217.57
U. S. Bonds to secure circulation		1,250.000.00
Bonds to secure U. S. Deposits		305,000.00
U. S. Bonds on hand		5,500.00
Bonds, securities, etc.		882,825.00
Due from National Banks (not reserve agents)	$1,590,320.17	
Due from State banks and bankers	274,929.74	
Due from approved reserve agents	905,460.53	
Checks and other cash items	221,220.70	
Exchange for clearing house	238,809.34	
Notes of other National Banks	237,149.00	
Fractional paper currency, nickels and cents	6,389.77	
Lawful money reserve in bank, viz.:		
Specie	1,357,104.00	
Legal tender notes	404,305.00	
Cash and Sight Exchange,		**$5,235,688.25**
Redemption Fund with U. S. Treasurer		62,500.00
Customers' Liabilities under Letters of Credit		58,141.66
Real Estate		28,228.12
TOTAL,		**$21,082,613.82**

LIABILITIES:

Capital stock paid in		$ 1,500,000.00
Surplus fund		300,000.00
Undivided profits, less expenses and taxes paid		2.083.678.31
National Bank notes outstanding		1,227,600.00
Due to other National Banks	$2,097,720.87	
Due to State banks and bankers	1,066,098.77	
Due to trust and savings banks	1,105,384.50	
Dividends unpaid	2,745.00	
Individual deposits subject to check	10,129,934.43	
Demand certificates of deposit	116,184.28	
Certified checks	26,006.62	
Cashier's checks outstanding	1,052,592.64	
U. S. Deposits	300,087.17	
Letters of credit	58,891.66	
Total Deposits,		**$15,955,645.94**
Reserved for taxes		15,689.57
TOTAL,		**$21,082,613.82**

STATE OF CALIFORNIA, }
County of Los Angeles, } ss.

I, W. T. S. Hammond, Cashier of the above named bank, do solemnly swear that the above statement is true to the best of my knowledge and belief.

W. T. S. HAMMOND, Cashier.

Subscribed and sworn to before me this seventh day of December, 1911.

W. N. HAMAKER, Notary Public.

Correct—Attest:

STODDARD JESS, W. C. PATTERSON, JOHN P. BURKE, JOHN S. CRAVENS, FRANK P. FLINT, J. O. KOEPFLI, Directors.

tance back from the loose surface soil and are most ingenious in concealing the entrance to runways. Applying the carbon as suggested would not catch one out of 1000. In fact, we do not think even with the hole opened up that fumes would reach down so as to destroy a great number of gophers. Their runways are so extensive that they might be long distances from the poisonous gases.

Better Kill Him.

I have a Rhode Island Red cockerel lame since hatching, has never walked. Has good appetite, seems to be healthy, is now 7 months old and weighs 3 lbs.; is a pet. What can I do with him?—Subscriber, National City.

If you are very fond of the little cockerel you might keep him as a pet, otherwise you had better eat him. Three pounds is under weight, and you could never breed from him.—Mrs. A. B.

Moles.

What is the best way to get rid of ground moles? They are pests in this section.—Subscriber, Los Gatos.

If the subscriber means the ordinary mole which lives only upon insect life in the ground, there is no more serious injury from him than the disfigurement of the surface of lawns and the garden. The only way to catch them is by traps, and the ordinary double-jawed trap works to perfection. This trap is so arranged that as the mole passes through his runway he releases the trigger, and no matter which direction the mole is coming from, he is caught on one set of jaws or the other. It is not possible to poison them, for, as noted above, they live on insect life only.

Veterinary

Answers in this column by Fred G. Matthews, M. S., D. V. M., 1233 Central Ave., Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Cowpox?

A young cow, with her first calf, has sores all around the top of her teats. She has had this trouble about a week and some of the sores have bursted. The sores seem very painful. —Subscriber, Tulare.

Take two ounces of gum camphor and add pure carbolic acid, drop after drop, till the camphor is nearly but not all, dissolved, and apply the solution to the sore places, once daily, with a feather.

Summer Sores.

A colt, three years old, has raw sores from the size of a dollar to three inches across, on each foot above the hoof and about the fetlocks. I have been doctoring them all summer with pure carbolic acid, burnt alum and other remedies. He seems to itch a great deal. I am told they are incurable, but decided to write the Cultivator.—Subscriber, Orange.

The summer sore, bursatti, is very difficult to cure. Cleanse the sores of all scabs, matter and blood, and rub powdered bichloride of mercury into the raw surface only, remove the scab after three or four days and repeat. When the sores are level with the healthy skin, wrap strips of burlap around the limbs, as bandages, covering the sores. Keep these bandages wet with a solution of five per cent coal tar disinfectant.

Leucorrhea.

When my mare had a colt last June there must have been some injury to the vagina, as a white matter passes from her. She seems to be in perfect health with this exception, and is doing hard work.—Subscriber, Sanger.

Mix alum six ounces and boric acid two ounces; dissolve one level teaspoonful in a quart of warm water, and inject it into the vagina. Use a fountain syringe and make one injection daily. Have your druggist mix Fowler's solution six ounces, fluid extract nux vomica two ounces and fluid extract black haw four ounces, and give two tablespoonfuls (one ounce) twice daily in the feed.—F.G.M.

Unthrifty Cow.

A cow, which calved about one year ago, came in ten days ahead of time, but cleaned properly, has not done well all summer, and gives only a small amount of milk. She had three or four surface sores on her front legs all summer. She has the habit of licking herself all over, but I can find no lice or other cause for the habit. I feed alfalfa hay alone but recently added a little bran and gave condition powders. She does not eat as well as usual, lately.—Subscriber, Riverside.

A definite diagnosis cannot be made from the symptoms given. Cows which acquire the habit of licking themselves often have hairs accumulate in balls in the rumen and indigestion may result. Change the feed and allow the cow a liberal supply of salt mixed with an equal amount of hardwood ashes to lick. I would dry the cow off for her own benefit. It would be advisable to get the opinion of your local veterinarian on this case. Purge once a month with Epsom salts one pound, dissolved in a quart of water, as a drench.—F. G. M.

JULIANA'S FIRST SALUTE.

The little Princess Juliana of Holland is said to be growing into a most delightful little girl, simply and sensibly brought up and well and strong. A pretty little story was told of her first appearance in public. It was this: When she was first taken out to ride in the palace gardens the passers-by saw only a nursemaid and a baby and no special notice was taken of her. Then a young sentry on duty suddenly realized that this same baby-carriage contained Her Royal Highness Princess Juliana Louise Emma Marie Wilhelmina, heiress to the throne of Holland. He saluted solemnly, and as it happened the tiny Princess's father was looking out and saw the first salute given to his small daughter. The young sentry was sent for and presented with a gift as a souvenir of the occasion. The little Princess was born in the spring of 1909, so she is now nearly three years old.—Harper's Bazar.

Boil oyster plant, parsnips and such vegetables with thin skins on; then peel when cold. The flavor is preserved, and your hands are not stained.

American Pumps Again Selected for the Patterson Ranch

The Reason Why

Because the success of the whole project depends on the successful operation of the eight pumping stations.

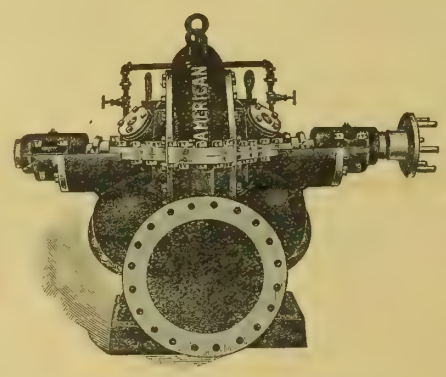
Because, recognizing this, the Patterson Co. employed the BEST ENGINEERS in the country to design the plants and select the pumps.

Because the Engineers knew that the first cost of the pumps was a small item compared with the cost of operation and maintenance, and that therefore GUARANTEED EFFICIENCY must be the determining feature in selecting the PUMPS to be used.

This was WHY AMERICAN PUMPS were selected for installation in the first FIVE STATIONS PUT IN 2 YEARS AGO.

BUT while the efficiency of a new pump can be tested at the factory, ONLY TIME CAN PROVE what the pump will do when working day in and day out. TWO YEARS SERVICE PROVED THEIR LASTING QUALITIES and ELEVEN MORE AMERICAN PUMPS are now being installed.

The Pump



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are the ONLY Pumps in use in the PATTERSON COLONY IRRIGATING SYSTEM

"IRRIGATION BY PUMPING"
Containing description and pictures of this, the Model Pumping Plant of the West, will be sent on application to

SOLE AGENTS

What It Means to You

What is true for this pumping plant with pumps having a combined capacity of 200,000 GALLONS A MINUTE and costing over a QUARTER OF A MILLION DOLLARS is true for the smallest isolated irrigating plant in the country.

GUARANTEED EFFICIENCY AND LASTING QUALITY are what count.

You may not feel that the size of your plant justifies the expense of an expert engineer and exhaustive tests. Then PROFIT BY THE EXPERIENCE and expense of the Patterson Company and do as they did—

BUY AN AMERICAN PUMP, even if it costs a little more.

They did so two years ago, and after TWO YEARS SERVICE they have done so again.

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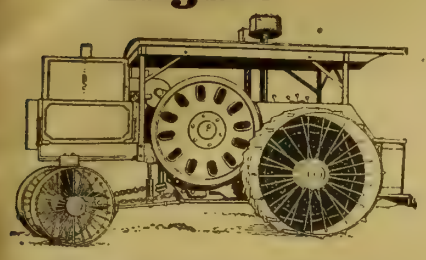
Oakland **Fresno** **Los Angeles**

Distillate Traction Engine



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Two speeds forward, one reverse, all on direct drive. Easy as an automobile to handle. Only two levers, one to drive, one to control power steering gear.

No Tank Wagon Required

We will make a special introductory price for a short time on a limited number.

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Write for catalogue and our special offer

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Machinery Supplies, Pipe and Fittings

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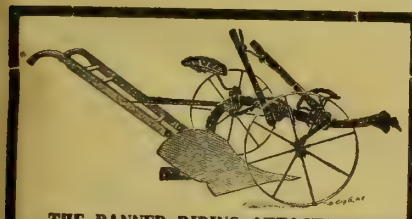

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Dont walk—ride. This will fit any plow or harrow. Hundreds sold. Sent on 30 day trial.

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Sandow Pumps 4000 Gallons a Minute!—

For Drainage, Irrigation, Dry Docks, Excavations, Coffer Dams and all places where large volumes of water must be moved, the SANDOW engine and direct connected centrifugal pump is a perfect proposition. Pumps from 75 to 4,000 gallons per minute. Engine 2½ to 20 horsepower. Guaranteed. Uses cheapest fuel—kerosene or distillate. Write stating your needs. We will quote you by return mail. Address Irrigation Dept. for Catalog No. 105.

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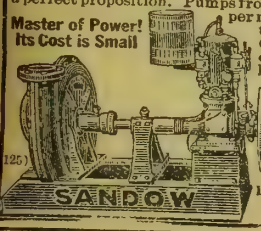

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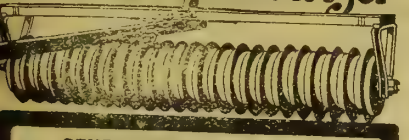
Detroit, Mich.

DUNHAM Pulverizer



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All wires are heavily galvanized 80 rod spool of Ideal galvanized **Barbed Wire $1.40.** Write to-day for large free Catalog showing 100 different styles and heights of fencing

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Household Department

THE MUSIC OF THE TREES.

The world is filled with music
To ears atuned aright,
And a soul in perfect harmony
Is a soul all full of light;
But of true earthborn music
That's thrown upon the breeze,
Few have such gentle beauty
As the music of the trees.

They all have different voices,
And, were their language known,
A beauty all undreamed would swell
In every varied tone.
Their harps are swept by viewless wings,
Alike at eve or morn,
As to the tranced and listening ear
Their melodies are borne.

From boyhood's happy hour
To manhood's world of care,
Thro' joy, or calm, or suffering,
Their music met my ear.
The maple sang in gladness,
While the aspen danced in glee,
But the music of the mournful pine
Was ever sweet to me.

When first I knew its swelling notes,
'Twas as a blithesome boy;
I loved to climb its sturdy trunk,
And in its arms to lie.
Full many a castle there I built
(They are all tumbled now),
And pleasant was the music then
It breathed across my brow.

I made my Pine an errant knight
Or troubadour of old,
And the Maple was his lady love,
Dearer than gems or gold.
He brushed his leaves and spoke to her
Across my waving hair,
And her gentle voice would rustle back
Sweet answer to his prayer.

But manhood came, and 'mid its cares
Sweet voices gladness brought;
My children in the old Pine played,
Its topmost branches sought,
Or 'neath its sturdy, spreading arms
They shouted in their glee,
While the Pine would roll its echo back
Like the distant moaning sea.

Its voice was full of gladness then;
Its tone is mournful now;
The Fire King swept across its form
And scathed its lofty brow.
The group that sought its welcome shade
Is now a broken ring—
No hope of other life it has
To meet their welcoming.

And ever still, in saddened tones,
It whispers in my ear:
"Tho' I am seared, my heart is sound,
And upward my career;
Be thou the same—for unto thee
A better lot is given;
My life is but for earth alone,
But thou canst enter Heaven."

Thus music is in every tree,
And each leaf has a tone,
And on the ear that listens
Its melody is thrown.
So whate'er may be the music
That is flung upon the breeze,
There are few that have the sweetness
Like the music of the trees.

ALONG THE PERILOUS WAY.

(Continued From Last Week.)

But now he was very lame and tired. His mouth was open wide, as he panted heavily. Bloody slavers ran from his lolling tongue, and his eyes were red rimmed and bleary. If they would only let him rest a little! But he was a wolf, and it was everybody's duty to seek his life. But because he was a wolf he had the wolfish heart that keeps on and on and knows not defeat till it is dead. Northward was the way; and because he could not stop, he loped onward; and though each lope was very short, still he was a wolf.

For a considerable distance he kept to the lane and secured temporary respite, but a delivery wagon blocked the way and forced him to the street. Before he had gone a quarter of a mile he was again pursued; and now he could not outstrip his pursuers. As he struggled painfully onward, a long, low building suddenly blocked the way, and a dozen curs were snapping around him, and, seeing a narrow door, he dashed into it, almost against a portly man in a white apron. The pursuers piled promiscuously about the door and fell to fighting, and he of the white apron slammed the door.

Shag limped into a long aisle, and his nose was filled with the most delicious fragrance he had ever encountered. All about him, row on row, was meat, red meat, and raw. He was in the city market. Cries and much confusion followed his appearance. Many customers, regardless of half filled orders or orders not begun, rushed pell mell from the building. The pangs of hunger that had temporarily been silenced by the fear, excitement and fierce wrath of battle now returned, and, reaching up, the starved brute seized a mouthful of tender chops. Gulp, gulp; he jerked his neck and swallowed the savory morsels in great pieces.

"Open dat door!" yelled a florid faced man in a white apron.

"No; keep it shut, and we'll catch him!" It was a vegetable dealer in the next stall speaking.

"You t'ink you keep dat greedy devil here? You t'ink he not eat your cabbage- My Got! Look! Von dollar wort' of chop he eat alretty! Open dat door!"

And the infuriated German hurled a bare beef bone at the marauder. It found his ribs with a hollow "bung," and the wolf growled his reply through a mouthful of meat. He was not afraid of these men, not he. They were not hunting him. But the irate meat vender made an attack with a terrible knife in one hand and a cleaver in the other, and Shag moved on, dragging a long string of sausage through the sawdust on the floor. Up and down the long aisle he limped, looking for a means of exit. Presently he saw an open side door, and he fled through it.

Once again the stern chase began, with more dodging of the miscellaneous traffic of the city street. In spite of his feast, he felt more tired. Had he been a wild wolf, he could have run interminably; but on account of his confinement his muscles were not so wiry nor his wind so inexhaustible as they would otherwise have been. Rest, rest, was nature's insistent cry within his tormented body. But he was a wolf, and his wolfish heart drove him forward. Instinct told him that he must soon be through the maze of men and their habitations, and he sought the open country as the drowning victim seeks the air. He was going toward the land of freedom. On, on!

Elton street was largely warehouse property, and here Shag had a run without much molestation. Soon he reached the railway yard. Long lines of freight cars stood on the sidings, and under and among them he threaded his way. A yard engine was clanging near, but the wolf did not turn aside, for now he was calloused to fear. He paused, and looked backward with eyes that saw little, and then he lay down below a box car.

Many hours he lay and rested, and longed for the darkness. Several yard men passed dangerously close, but he crouched low in the shadows and es-

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We will give you this gift ABSOLUTELY FREE but before we tell you about it there is something else you will be interested in.

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Send QUICK for our big catalogue No. 41C, filled with genuine bargains in high-grade goods of all kinds.

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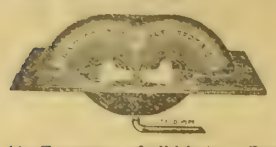
Sievert Distillate Oil Burners



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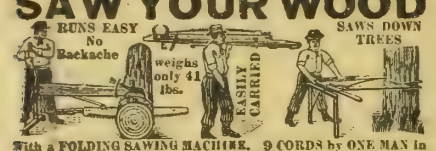

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M. Bassett Hanford, Cal

caped observation. Toward evening that clanging, black, ill smelling monster again passed his way; and a few moments later there was a tremendous shock at the end of the line of cars. A wave of bumps and bangs seemed sweeping his way, and, filled with fear at the commotion, he attempted to get out. It required the third effort to get his stiffened, painful legs below him, and he crawled out just as the long line of cars started backward. Just then he heard the excited shouting of men near him, so he crawled under an adjoining line of standing cars. But every man here, as elsewhere, was a foe; and soon pieces of coal and stone came whistling his way. He was forced to strike out again on another march on his perilous way.

He was rested somewhat, and, thanks to the German's chops, he felt stronger, but every muscle was painfully sore and tortured him with each step. There were many cuts and bruises, too, on his gaunt body; for collies and curs bite hard. Still, he was a wolf, and the north called him. By the time he had crossed the tracks he had limbered up a little. He crossed the next avenue, went through a vacant lot, scared many bow-wows from a terrified St. Bernard pup, and took to the lane leading him in the right direction, toward the great wild.

Soon he was out in the street again. Ahead, even with his half seeing eyes, he could see the houses thinning out. Beyond was a stretch of prairie, and there, away on the horizon, was a dark line of timber. A fierce joy filled him, and he began to lope again. Three or four dogs were around him, but they lacked courage to touch him. Again he quickened his pace. Freedom and the land that he had yearned for for years were almost within his grasp. He would yet reach the land that called to him. Soon he would slip down along the bank of the river to the right and take shelter among the willows till darkness would hide him.

Suddenly a great greyhound shot alongside of him; then another on the opposite side. They arched their lithe necks as they ran, and rather dubiously prepared to grapple. Behind him Shag heard the quick thudding of a fast horse's feet, and shouts of encouragement from the driver. Ted Pentland, one of the city sports, was out for a run with his hounds. Big, shaggy staghounds they were, the best that breeding and money could obtain. They had scars of many a dying coyote's teeth upon their bodies; and now their proud owner saw fresh laurels within his reach in the killing of this gaunt, pain racked cripple of a gray wolf.

"Take hold of him, Bobs! Hi! S-s-s-sick!"

And they took hold, one before and one behind, as they had done with many a coyote. Shag went down before the onslaught; but he rolled over, and, in spite of his assailants, came up again. Victor had a cruel hold behind, and was worrying and tearing; but the other hound could not get a hold, for, with that lightning neck work which characterizes the chops of a wolf, Shag bit and cut and tore with his terrible jaws. With a six inch rent in his shoulder and a deep, ragged tear in his neck, Bobs gave a howl of anguish and quit, to lie and gasp and cough bloody froth. Then the wolf doubled backward, and with another chop fastened upon his rear antagonist. This time he did not let go, for now he knew that his only strength was in his jaws.

The frantic Pentland was now out of his rig and using his whip unmercifully on both dog and wolf in a wild attempt to separate them; but the two combatants, with scarcely a sound, other than their sickening, feeble worrying, rolled and guzzled.

Suddenly the hound lurched over, and with a gurgling gasp relaxed his hold on the thigh of the wolf. The latter had bitten him through the neck and killed him. The great, fierce brute lay on his victim and bit him again; then, in response to the lashings he was receiving, he propped himself up feebly on two legs and growled. Pentland immediately made a rush and scrambled into his buggy. Seeing the knot of onlookers gathering, he called for a gun. Someone instantly volunteered one, and they drove off to get it. The destruction of two fine hounds called for vengeance.

Shag rose from his victim, and, standing unsteadily on his two and a half sound legs, gazed with bloody eyes upon the half dozen onlookers across the road. His gray, disheveled coat was very red, and the blood trickled steadily down his useless hind leg from the terrible wound in his thigh; but still he was a wolf, there was life still in him, and the north called him. He hobbled limply toward the river, rolled and fell down the steep bank, and a hundred yards farther on reached the spreading willow thickets. On and on he hurried, limping, stumbling and staggering, stopping only once to quench his terrible thirst. Dodging from one thicket to another, he made half a mile by darkness. Then, because he could go no farther, he stopped, and fell down to lick his stiffening wounds. Any other creature would have laid down to die, or, indeed, have yielded to death's call long before; but because he was a wolf, and yet had life in him, he refused to die.

That night he crawled another mile; and all the following day he lay in hiding and gazed wistfully across the prairie at the long line on the horizon to the northward. Next night he crept into a farm yard and feasted on several sucking pigs; and before morning he somehow crossed that five mile stretch of prairie and entered the northern woods.

He had reached the goal of his weary life. He would see again his

New Land Opening

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The canal, drainage and road construction has been completed on the Delevan and Maxwell Units and these lands are now being sold in 10, 20 and 40-acre subdivisions.

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Deciduous Fruits	Alfalfa
Dairying	Berries
Hogs	Bees
Poultry	Garden Truck

NAME_____ ADDRESS_____

TEN YEARLY PAYMENTS

ome, the land of the pines and
pruces. It lay many miles yet, away
o the north; but there was shelter
ll the way, and he knew that he
ould reach it. The voices from the
orthern wilderness, singing of ever-
reens, whispering of aspens, the call
f the moose, and all the other wood
ounds—they that had spoken to him
o far away—would now whisper in
is ear. The joy in his heart was
reat, and it was well merited; for
hrough the camp of his enemies, one
undred thousand strong, he had run
he gauntlet of danger and suffering,
nd reached the end of his journey
long the perilous way.—Farm Prog-
ess.

HOT BREADS FOR COLD MORNINGS.

With the coming of the cool morn-
ngs of winter one naturally begins
o think of tempting, quick, warm
reads for breakfast. There are in-
umerable breads of this kind that
an be easily and economically made
nd they do much towards making the
rst meal of the day a nutritious as
ell as a satisfying one. In the mak-
ng of these breads the coarser flours
uch as graham, whole wheat, corn-
eal and cold rice and hominy, play
n important part. The following are
number of easily made and thor-
ughly tested recipes that will be ap-
reciated by housewives who are striv-
ng to keep their tables seasonable.

raham Muffins.

Rub to a cream a tablespoon of
ugar and two of butter. Into this
eat four eggs, sift a teaspoon of bak-
g powder into three cups of graham
our, add the butter and egg mixture,
nd beat very hard for three minutes.
urn into heated and greased muffin
ns and bake in a very hot oven.

ice Muffins.

Make a batter of a quart of milk,
ree beaten eggs, a tablespoon of
elted butter, a teaspoon each of salt
nd sugar, and two cups of sifted
our. Mix thoroughly, then beat in a
p of cold rice. Beat very hard for
ve minutes and bake in a quick oven.

atmeal Muffins.

To one cup of oatmeal mush add
e-half cup of milk, one well-beaten
g, one teaspoon of butter, one table-
oon of sugar and one cup of sifted
our in which has been sifted two tea-
oons of baking powder. Stir well
gether, beating at least three min-
es, and bake in hot muffin pans.

uick Biscuits.

One quart flour, one and one-half
p milk, one and one-half cup water,
e tablespoon mixed butter and lard,
e heaping teaspoon baking powder,
lf a teaspoon salt. Sift the salt with
e flour, mix in the butter and lard,
d the baking powder and the milk
d water, and mix to a soft dough.
ndle as little as possible. Roll out
sheets an inch thick, cut into rounds
d bake in a well-floured pan.

aham Biscuits.

Sift together in a chopping bowl a
t of graham flour and half a pint
white flour. To this add a teaspoon
salt, one of sugar and two well
nded spoons of baking powder. Mix
roughly and chop into the mixture
tablespoons of lard. Add a pint
milk, and if the mixture is then too
f to handle, add enough water to
ke into a soft dough. Turn upon a
red board, roll out and cut into bis-
ts, handling as little and as lightly
possible. Bake in a steady oven.

ham Gems.

nto a pint of warm milk whip three
eaten eggs, one tablespoon of
melted butter and a teaspoon of sugar. Gradually stir in a cup and a half of graham flour and beat hard for several minutes. Turn into heated gem pans, and bake in a very hot oven. Serve immediately.

Quick Waffles.

Two cups of flour sifted twice with one teaspoon of baking powder and the same of salt. Three eggs, one tablespoon of butter, two cups of milk. Beat the yolks smooth, add the milk, and turn this in upon the flour. Whip lightly and quickly for one minute, add the stiffened whites and drop by spoons into heated and well greased waffle irons.

Quick Buckwheat Cakes.

Two cups of buckwheat and half a cup of cornmeal; two cups of warm milk and half a cup of warm water, two tablespoons of molasses, two teaspoons of baking powder, one even teaspoon of salt. Mix milk, water and molasses together. Sift meal and flour three times with the baking powder and salt. Make a hole in the center of the flour, stir in the milk and water quickly and lightly until you have a good batter, not too stiff—and bake.

Corn Bread.

Two cups of cornmeal, one cup of flour, two and a half cups of milk, three eggs, a tablespoon each of butter and white sugar, one teaspoon of salt, two teaspoons of baking powder. Melt the butter and stir it into the eggs, which should have been beaten very light, and after sifting the salt, sugar and baking powder with the meal and flour, put in the milk, eggs and butter. Beat hard and bake for half an hour in a greased pan in a steady oven.—Farm Review.

GOOD THINGS TO REMEMBER.

To be loved, you must be lovable.

Never lose confidence in yourself.

Study yourself, know yourself, and learn to govern yourself.

Country boys usually make the most successful city men.

It is easier to learn to use tobacco than it is to quit using it.

Most people fail because they have not fitted themselves for the opportunities which come.

When you discover in others a quality which is distasteful to you, be careful you do not do those things which are distasteful to others.

The boy who has the best opportunities and the most natural ability does not always prove the most successful man. Determination to make the most of yourself is the greatest factor in success.—Selected.

TO YOUNG MEN.

Be firm! One constant element in luck
Is genuine, solid, old Teutonic pluck.
See yon tall shaft. It felt the earthquake's thrill,
Clung to its base, and greets the sunrise still.

Stick to your aim. The mongrel's hold will slip,
But only crowbars loose the bulldog's grip.
Small as he looks, the jaw that never yields
Drags down the bellowing monarch of the fields.

Yet in opinions look not always back.
The wake is nothing—mind the coming track.
Leave what you've done for what you have to do.
Don't be "consistent," but be simply true.

—Oliver Wendell Holmes.

Or sense or spirit? Who shall say
What touch the chord of memory thrills?
It passed, and left the August day
Ablaze on lonely hills.

—Whittier.

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San Francisco-Los Angeles Produce Markets

Los Angeles Market

LOS ANGELES, Dec. 13, 1911.

Butter.

Butter has dropped a point on extras, and best grades show a sluggish market. Cheaper goods in fair demand.

Prices to trade 2½c in advance of the following Produce Exchange quotations:

Extras	32½
Firsts	31
Ladles	25
Country	23

Cheese.

Local Anchor	16
Oregon Daisy	18@18½
Northern Fresh	17½@18
Domestic Swiss	18
Imported Swiss	33

Eggs and Poultry.

Local candled show an eight cent decline, owing to large receipts from nearby egg ranches. Eastern fresh have ceased to arrive, owing to cold weather. Eastern storage remain about as last week.

Buying prices f. o. b. Los Angeles are:

Local Ranch Candled	40
Case count	36
Eastern Storage	27@28
Pullets	26

Dealers pay for live poultry f. o. b.:

Hens, lb	12@15
Roosters	8
Broilers	21
Fryers	14
Roasters	14
Turkeys	18@20
Ducks	14
Geese	14
Guinea Hens, doz	4.00
Squabs, doz	1.75

Live Stock.

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs	6¾
Prime Steers	6
Heifers	6
Calves, lb	6½
Sheep, Ewes, head	4.75
Lambs, head	3.75@4.25
Wethers	5.00@5.60

Potatoes.

Wholesale prices are:

Sweets, Yellow, cental	2.25
Highlands, cental	1.60@1.85
Salinas	2.00@2.10
Lompoc	2.00@2.10
Oregons	2.10@2.25
Oregon Early Wonder	2.40@2.50

Onions.

Wholesale quotations:

Australian Brown, cental	1.75
Silverskins, sack	1.75@1.85
Yellow Danvers, cental	1.75
White Wax	1.60@1.75
Garlic	6@8

Vegetables.

Wholesale quotations:

Artichokes, Northern, doz	90@1.10
Beets, doz bunches	35
Bell Peppers, lb	9@10
Brussels Sprouts, lb	8@10
Beans, Limas	7@8
Beans, Wax	7@8
Beans, Green	9@10
Chilis, Green	7@8
Chilis, Red	15@16
Cucumbers, lugs	1.00@1.25
Cabbage, sack	85@90
Cabbage, Red, lb	3@3½
Cauliflower, crate	1.00@1.50
Celery, crate	3.50@4.00
Carrots, sack	90@1.00
Egg Plant	3@5
Horseradish, lb	13½
Onions, Green, doz bunches	15@20
Kohl-rabi, doz bunches	40
Leeks, doz	35@40
Lettuce, crate	90@1.10
Mushrooms, lb	50@1.00
Oyster Plant, lb	15@20
Okra	10
Peas, lb	5@7
Parsnips, doz bunches	45
Parsley, doz bunches	25@30
Turnips, sack	90@1.00
Radishes, doz bunches	15@20
Rhubarb, Crimson Winter	1.00@1.10
Spinach, doz	15@20
Squash, Summer	1.00
Spearmnit, doz	25@30
Tomatoes, lug	75@85
Watercress, doz	35@40

Citrus Fruits.

New Navels	2.50@3.50
Valencias	4.50
Grapefruit, Seedless	3.00@3.25
Limes, hundred	1.25
Lemons	2.75@3.00

Fresh Fruits.

Wholesale prices on the market are:

Alligator Pears, doz	5.00
Apples, Bellflowers	1.10@1.35
Apples, Spitzenbergs	1.10@1.50
Apples, Pearmains	1.25
Apples, Jonathans	2.25@2.35
Bananas	4½
Casabas, crate	1.50@1.75
Christmas Melons, crate	1.75@2.00
Grapes, Thompson Seedless, lb	3
Grapes, Black Hamburg, lug	65
Grapes, Muscats	75@90
Grapes, Tokays	85@1.00
Grapes, Cornichon	1.10
Peaches, lug	1.50@1.75
Pineapples	10
Quinces, lug	1.00@1.10
Persimmons	1.25
Pears, Bartlett, lb	7
Blackberries	12½
Raspberries	10@12
Strawberries	12@15

Dried Fruits.

Wholesale prices to retailers are:

Evaporated Apples, fancy, lb	11@11½
Apricots	16@17
Figs, box	1.50@1.75
Peaches	11@12½
Nectarines	12
Pears	12@13
Prunes	7½@14
Plums	10

Beans, Dried.

Wholesale quotations:

Limas	6.50
Black Eyes	4.50@5.00
Pinks	3.75
Lady Washington	4.75
Small White	4.75
Garvanzas	4.50
Bayous	4.50@5.00
Lentils	8.00
Mexican Reds	4.75@5.00

Nuts.

Wholesale quotations:

No. 1 Soft Shell Walnuts	14@15
No. 1 Hard Shell Walnuts	13½
No. 2 Walnuts	11
Almonds, IXL, fancy, lb	22
Pecans, polished	15@17
Pecans, Eastern	8
Peanuts, California	5@5½
Pine Nuts	18

Honey.

Wholesale quotations:

Extracted Water White	8½
Extracted Light Amber	7½
Comb Water White	16@17
Light Amber	13@14
Beeswax	30

Hay.

The dry weather is raising the price of hay beyond any anticipation, and if continued much longer will boost to almost prohibitive prices.

Buying prices f. o. b. cars Los Angeles:

Barley Hay	18.00@20.00
Wheat Hay	16.00@18.00
Tame Oats	20.00@22.00
Alfalfa	15.00@16.00

Grain.

Wholesale selling price f. o. b. Los Angeles:

Wheat, new, cental	1.75@1.80
Corn	1.70@1.95
Kaffir Corn	1.80
Millet	3.75
Popcorn	4.75@5.00
Egyptian Corn	1.80
White Oats	1.95
Seed Barley	1.50
Milo	1.95

Feed Stuff.

Wholesale selling price f. o. b. Los Angeles:

Alfalfa Meal	1.25
Beef Scrap	3.10
Bone Meal	2.05
Charcoal	1.95
Cracked Corn	2.00
Cracked Wheat	1.90
Shorts	1.85
Bran	1.60
Oil Cake Meal	2.65
Feed Meal	2.05
Rolled Barley	2.10
Rolled Oats	2.00
Middlings	1.85

San Francisco Market

SAN FRANCISCO, Dec. 12, 1911.

Butter.

Butter advanced materially after last quotations, then declined till Monday, when extras dropped to within a cent of prices of a week ago. Market firm at this writing.

Prices to trade 2½c in advance of the following Produce Exchange quotations:

California Extras, lb	32
Prime Firsts	28½
Firsts	27
Seconds	26
Storage Extra	28

Cheese.

California Flats	14@17
Cal. Young America, fy, new	15½@17
Oregon, fancy	15½

Eggs and Poultry.

Eggs took the toboggan during all of last week, recovered slightly on Monday, but extras still stand six points under our last quotations. It is probable former high prices will not obtain again this season.

Official quotations of the San Francisco Wholesale Dairy and Produce Exchange are:

Fresh Ranch Extras	41½
Firsts	42
Select Pullets	36½
Hens	3.50@10.00
Fryers, doz	5.00@5.50
Ducks	4.00@9.00
Broilers	3.00@4.50
Roosters, doz	4.00@9.00
Geese	2.00@3.00
Goslings, pair	2.00@2.25
Pigeons	1.50@2.50
Turkeys	21@23
Squabs	3.00@4.00

Live Stock.

San Francisco prices, gross weight:

Steers	4@6
Cows and Heifers	3@4¾
Calves, lb	5½@6¾
Hogs	6¼@6¾
Wethers, No. 1	3¾@4
Lambs	4½@5
Ewes, No. 1	3¼@3½

Potatoes.

Wholesale market quotations:

River Burbanks, cental	1.10@1.35
Alamedas	1.15@1.65
Sweets, cental	1.65@1.75
Salinas Burbanks	1.60@1.85

Onions.

Yellow, New	1.00@1.25
Garlic, new, lb	3@4

Vegetables.

Wholesale quotations:

Asparagus, box	1.00@1.75
Beans, String	5@7
Beans, Wax	2½@4
Limas	4@8
Bell Peppers, box	75@1.00
Cabbage, cental	50@1.00
Cauliflower, doz	40@60
Carrots	40@60
Cucumbers, Southern, box	75@1.00
Corn, sack	50@1.25
Chile, box	45@60
Celery, crate	2.00@2.50
Egg Plant, box	40@85
Lettuce, crate	75@2.00
Okra, box	65@1.00
Peas, lb	4@8
Hubbard Squash, sack	40@60
Summer Squash, lug	65@1.00
Squash, Marrowfat	40@60
Tomatoes, box	75@1.25
Turnips	60@75

Citrus Fruits.

Navels	2.00@3.00
Navels, Standard	1.50
Valencias	3.25@4.50
Grapefruit, Seedless	2.00@3.75
Lemons	1.50@5.00
Limes, Mexican	4.00@4.50
Tangerines	1.15@2.35

Fresh Fruits.

Apples, Bellefleurs	85@1.25
Apples, Newtons	75@1.25
Apples, Spitzenberg	85@1.35
Grapes, Muscat, lug	75@1.15
Grapes, Tokay	50@65
Pears, Winter, box	75@1.75
Persimmons	1.00@1.50
Pomegranates	1.25@2.00
Quinces, box	50@75
Strawberries	4.00@7.00
Pineapples, Hawaiian	3.00@3.50
Bananas, bunch	1.00@1.50

Dried Fruits.

FRUITS—1911 crop, f. o. b., carload lots, per lb: Apples, 8@9c; Apricots, 12½@15½c; Peaches, 9@10½c; Prunes, bulk basis, 6@7½c; per lb, 4¾@10c; Figs, 4¼@5½c for White; Pears, 9½@12½c.

RAISINS—1911 crop: Seeded, per pkg—Fancy, No. 16, 6¼c; Choice, No. 16, 6c; Loose Muscatels, in 50-lb boxes—Standard, 4-crown, 5¼c; 3-crown, 4¾c; 2-crown, 4¼c; Seedless Muscatels, 5½c; Sultanas, 6@6¼c; Thompsons, 7@7½c.

Nuts.

Walnuts, No. 1 Soft Shell	14
Walnuts, No. 1 Hard Shell	13½
Almonds, Nonp	18@18½
Almonds, I X L	17½
Pecans	14¼@14½
Chestnuts, California	9@11
Peanuts	3@5

Beans, Dried.

Limas	6.00@6.15
Pink	3.00@3.25
Black Eyes	3.80@4.00
Small White	4.10@4.15
Large White	4.05@4.15
Kidneys	5.00@5.15
Garbanzos	3.00@3.25
Bayou	3.65@3.85
Red Mexican	4.40@4.50
Horse Beans	2.75@3.00
Cranberry	4.00@4.25

Hops.

Hops, Coast, 1910	35@38
Hops, 1911	40@46
Hops, Oregon, 1911	40@46

Honey.

Water White, Comb, 1911	15@16
Dark Comb	12½
Extracted White, 1911	8½@9½
Extracted Dark	5@6
Beeswax, lb	24@30

Hay.

Tuesday's Morning Call says: The week opened with a very strong and rising hay market. For choice wheat $21 was refused, sellers asking $22. There is no grass in the country, and farmers are obliged to feed hay, hence the firmness and upward tendency of prices.

No. 1 Wheat or Wh & Oat	17.50@18.50
No. 2 Wheat or Wh & Oat	13.00@14.50
Choice Tame	17.00@18.00
Other Tame Oat	12.00@16.00
Wild Oats	11.00@15.00
Stock Hay	8.00@9.00
Alfalfa	11.50@14.50
Straw, bale	60@75

Grain.

Wheat	1.47½@1.52½
Barley, fancy	1.77½
Barley, good to choice	1.75
Barley, poor to fair	1.70@1.72½
Corn	1.60@1.70
Oats, White	1.75@1.85
Rye	1.50@1.57½
Mustard, Brown	5½
Alfalfa Seed	17@18
Millet	2¾@3
Flaxseed	5@5½
Broom Corn Seed, ton	30.00

Feed Stuff.

Alfalfa Meal	15.00@17.00
Bran, ton	26.00@27.00
Feed Cornmeal, ton	38.00@39.00
Cracked Corn	38.00@39.00
Rolled Barley, ton	40.00@41.50
Rolled Oats, ton	37.00@38.00
Middlings	32.50@35.00
Oilcake Meal	42.00@43.50
Cocoanut Cake, ton	24.00@25.00
Mixed Feed, ton	25.00@27.00
Shorts	28.00@29.00

Citrus Fruit Market

LOS ANGELES, Dec. 13, 1911.

Five-sixths of the output of Butte and Tulare Counties has gone to market, and all shipments have brought remarkably good prices. Extra fancy stock has readily commanded $2.2[illegible] while good to choice brought not far from $2.00 f. o. b. California points. Southern California Navels are going forward more freely, and will continue to increase from now on. Excepting in one or two northern sections, sizes have been very satisfactory.

Lemons are low, perhaps no lower than other years, but rather lower than anticipated at this time. Fine stock is commanding $2.50, other grades running as low as $2.00 f. o. b. The quality is of the best, and those kept until later in the season will probably command better prices.

Shipments.

Shipments of Southern California citrus fruits to date since Nov. 1, 1911: Oranges, 488 cars; lemons, 595; total, 1,083. To same date last season: Oranges, 1,676; lemons, 561; total, 2,237. Tulare County: 2,466 cars of oranges, 64 of lemons; total, 2,530. Butte and Sacramento, 300 cars of oranges.

NEW YORK, Dec. 11.—Ten cars Navels, one car Airzona Navels, seven cars California lemons sold. Market strong on Navels, firm on good stock lemons. Weather fair and warm.

Navels.	Avge.
Mariposa, O'Neill Ft. Co	$3.25
Mariposa, O'Neill Ft. Co	3.55
Camel, Q. C. Ex	3.10
Pocahontas, Imp., T. C. C. Ex	4.00
Golden State, T. C. C. Ex	3.70
Blue Dry Bog, Central California	3.15
Orangynos, Central California	3.50
Diamond T	3.90
Giltedge	3.75
Pride of the West, Pion'r Ft. Co.	3.20
Winterhaven, Stewart Ft. Co	3.50
Lilly, fy, Ferryman F. L. & W. Co.	3.90
Mars, E. Peycke Co	2.80
Arizona Navels.	**Avge.**
Tonto	$4.20
Merit	3.55
Arizonas—Halves.	**Avge.**
Desert	$3.15
Cactus	2.60
Tonto	2.10
Lemons.	**Avge.**
Pet	$3.30
Quail	3.15
Coyote	2.90
Cosmos	3.05
Southland Beauties	3.15
Justrite	2.95
Lotus	3.00
Monogram	2.80
Whittier	3.10
Pico	2.65
Independent, fy	3.25
Choice	2.90

ST. LOUIS, Dec. 11.—Cool, raining. Market strong on Navels; weak on lemons. Six cars sold.

Navels.	Avge.
Gold of Ophir, B. C. Thermalito	$3.05
Tulip, T. C. C., Ponca	3.10
Fullvalue, T. C. C., Ponca	2.90
Symbol, Stewart Ft. Co	2.85
Table Mtn., B. C. Thermalito	2.90
Oakleaf, T. C. C., Ponca	3.00
Gold of Ophir, B. C. Thermalito	2.85
Lemons.	**Avge.**
Punch, S. T., Colegrove	$2.80
Mars, xc. E. Peycke Co	1.90
Club, S. T., Colegrove	2.10
Jupiter, E. Peycke Co	1.80

CLEVELAND, Dec. 11.—Two cars Navels, two cars lemons sold. Market advancing on Navels, firm on good stock lemons. Raining.

Navels.	Avge.
Gold of Ophir, B. C. Thermalito	$2.95
Forgetmenot, T. C. C., Porterville	3.40
Table Mtn, B. C. Thermalito	3.05
Lemons.	**Avge.**
Protection, Cen. California Ex	$3.45
Pet, S. A. Ex	3.25
Greyhound, S. A. Ex	3.10
Buckeye, Ceneral California Ex	3.00
Arab, S. A. Ex	3.50
Duck, S. A. Ex	2.30

CINCINNATI, Dec. 11.—Cool, raining. Market strong on Navels, weak on lemons. Market advancing on Floridas. One car Navels, two cars lemons, seven cars Floridas sold.

Lemons.	Avge.
Lemoncove, Cen. California Ex	$2.05
Peerless, xc, San Diego Ft. Co	2.65
Justasgood, Cen. California Ex	1.10
Sunset	1.90
Navels.	**Avge.**
Gold of Ophir, B. C. Thermalito	$2.95
Limes—Halves.	**Avge.**
Red and Blue Label	$ .45
Florida Brights	$2.40 to 2.75
Russet	$1.95 to 2.70

PITTSBURG, Dec. 11.—Seven cars sold. Market steady on oranges, lower on lemons. Raining.

Navels.	Avge.
Gold of Ophir, B. C. Thermalito	$2.85
[illegible], T. C. C., Ponca	3.15
[illegible]oaks, F. F. Ft. Co	2.90
Lemons.	**Avge.**
[illegible]anon, A. C. G., Lamanda Park	$2.75
[illegible]oyote, O. K. Ex	2.75
Refreshing, A. C. G., Lamanda Pk	2.00
Blue Jay, O. K. Ex	2.15

BOSTON, Dec. 11.—Five cars sold. Clear, warm. Market very strong on navels; doing better on lemons.

Lemons.	Avge.
Squirrel, A. H., Arlington	$2.90
Black Hawk, A. H., Arlington	2.85
Brownie, Rialto Ft. Co	2.30
Squirrel, Circle 5	2.85
Quail, O. K. Ex	3.10
Country Club, Rialto Ft. Co	1.70
Navels.	**Avge.**
Tulip, T. C. C., Porterville	$3.25
Homer, Q. C., Corona	1.85

Lemons—Halves.	Avge.
Squirrel	$1.60

PHILADELPHIA, Dec. 11.—One car navels, two cars lemons sold. Also nineteen cars Floridas. Oranges, $2.10 to $4.30; average, $2.60. Grapefruit, $2.70 to $5.00; average, $3.75. Market steady.

Lemons.	Avge.
Kaweah Maid, C. C., Ex	$2.65
Mt. Lowe, A. C. G., Lamanda Park	2.70
Basket, C. C. Ex	2.25
Mt. Wilson, A.C.G., Lamanda Park	2.05
Limes—Halves.	**Avge.**
Central California Ex	$ .85

Los Angeles Market.

LOS ANGELES, Dec. 11. — Seven cars navels, one car lemons sold.

Brand. Grade. District. Shipped.	Avge.
Squaw, fy, or, imp, Casa Blanca, not shipped	$1.80
California, ch, Casa Blanca, not shipped	1.55
Honest Pack, fy, or, navels, Tustin, Dec. 9, Chicago	1.67½
Old Oak, sd, navels, Tustin, Dec. 9, Chicago	1.42½
Woodland, fy, or, navels, Orange, Dec. 9, Kansas City	1.55
Silver Star, sd, Orange, Dec. 9, Kansas City	1.30
Woodland, fy, imp, navels, Orange, Dec. 9, Kansas City	1.55
Silver Star, sd, imp, Orange, Dec. 9, Kansas City	1.30
Honest Pack, fy, or, navels, Tustin, Dec. 8, Chicago	1.60
Old Oak, sd, navels, Tustin, Dec. 8, Chicago	1.35
Honest Pack, fy, or, navels, Tustin, Dec. 11, Chicago	1.67½
Old Oak, sd, navels, Tustin, Dec. 11, Chicago	1.42½
Woodland, fy, or, Orange, not shipped	1.75
Silver Star, sd, Orange, not shipped	1.50
Circus, ch, lemons, Glendale, Dec. 9, Chicago	1.60
Del Oro, sd, lemons, Glendale, Dec. 9, Chicago	1.35

THE AUTOMOBILE AND THE FARMER.

If there is any class of people on earth that can make profitable use of the automobile and auto truck it is the farmers. Many farmers are buying automobiles not only for pleasure but for business. We were standing on the street the other day when a dairy farmer drove up to the curbing with an automobile. He lives nine miles in the country, and it takes him but thirty minutes or less to come to town. In his remarks to us he in substance said: "I find the automobile a profitable investment in my business. If a machine breaks down or material for running the farm is needed quickly, I find the automobile a most convenient way of obtaining it. Not only does it serve me in a business way, but I find it possible to attend evening entertainments in town with my family which I could not when I had to depend upon horses."

The auto trucks are also coming into use for hauling farm produce to market. The canning factory at Ft. Atkinson, Wis., this year hired an auto tractor to haul shelled peas from the vining plants to their cannery and found it did the work cheaper than teams and more satisfactorily. It could work eighteen hours a day in hot weather and no one felt concerned about its condition. The lighter trucks are coming in use for delivering milk and cream.

We are living in the age of gasoline and horseless wagons and carriages, and no one can say how far they will go in replacing the horse upon the farm, but it is certain that many a farmer will find that the automobile, auto truck and auto tractor is a great aid in his work.—Hoard's Dairyman.

California Cultivator
Clubbing Price List

For Season 1911-1912

This magazine price list is prepared annually for the convenience and benefit of Cultivator subscribers. The prices given allow our readers the benefit of the lowest figures possible, in return for which, all we require is that to all orders a year's subscription to The Cultivator (class 18) be added at 90c (regular price $1.00 per year).

Find on this sheet a very complete list of the most popular magazines. We can, however, supply any periodical published. The lowest price on any not listed here will be quoted on request. Let us make you a price on any combination you may desire.

Periodicals in any combination may be ordered to the same or different addresses. Foreign or Canadian subscriptions are extra on account of added postage, and prices must be gotten by correspondence. Subscriptions may be either "new" or "renewals (except where otherwise stated in the list), but it is important that this information be given in each case.

Books—Send us a postal for our list of agricultural books which we supply subscribers and which we recommend as most suited to California conditions.

The pricing of various combinations of magazines is a simple matter; all are listed according to class number and this class number multiplied by 5 gives the cost price.

EXAMPLE:

Class No.	Regular Price
23—American Magazine	$1.50
35—The Review of Reviews	3.00
20—Good Housekeeping (or Cosmopolitan	1.50
18—Cultivator	1.00
96×5=$4.80—Club price for all. Amount saved on this club	$2.20

CLASS 7.

American Hen Magazine	$0.50	Any two Class 7 with Cultivator $1.60
American Poultry Journal	.50	
American Poultry World	.50	
Every Woman's Magazine	.50	
Poultry Culture	.50	
Reliable Poultry Journal	.50	

CLASS 8.

American Messenger	$0.50	Any two Class 8 with Cultivator $1.70
Boys' World	.50	
Farm & Fireside	.50	
Farm-Poultry	.50	
Girl's Companion	.50	
Ladies' World	.50	
Northwest Poultry Journal	.50	
Todays Magazine	.50	

CLASS 9.

Inland Poultry Journal	$0.50	One of Class 9 with Cultivator $1.35
McCall's Magazine & Pattern	.50	

CLASS 12.

Designer	$0.75	Any one Class 12 with Cultivator $1.50
Every Day Housekeeping	.75	
Home Needlework	.75	
Modern Priscilla (Needlework)	.75	
New Idea Woman's Magazine	.75	
Young People's Weekly	.75	

CLASS 15.

Architect, Builder and Contractor	$1.00	Any one Class 15 with Cultivator $1.65
Baby	1.00	
Business & Bookkeeper	1.00	
Concrete	1.00	
Motor Print	1.00	
Northwestern Agriculturist	1.00	
Watson's Magazine	1.00	

CLASS 16.

Amateur Sportsman	$1.00	Any one Class 16 with Cultivator $1.70
Black Cat	1.00	
Cooking Club Magazine	1.00	
Fly	1.00	
Health	1.00	
Judge's Library (A magazine of fun)	1.00	
Judge's Quarterly	1.00	
Kindergarten Primary Magazine (new)	1.00	
Orange Judd Farmer	1.00	
Prof. & Amateur Photography	1.00	
Uncle Remus Home Magazine	1.00	
Woman's Journal (new)	1.00	

CLASS 17.

American Bee Journal	$1.00	Any one Class 17 with Cultivator $1.75
American Boy	1.00	
American Baby	1.00	
American School Board Journal	1.00	
American Primary Teacher	1.00	
Boston Cooking School Magazine	1.00	
Boy's Magazine	1.00	
Camera (Previous to Jan. 1st, 1912. See Class 23)	1.00	
Camera Craft (new)	1.00	
Children's Magazine (new)	1.00	Any two Class 17 with Cultivator $2.60
Kindergarten Review	1.00	
Little Folks (new)	1.00	
Musical Observer	1.00	
Modern Electrics	1.00	
Motor Field	1.00	
Nautilis (new	1.00	
Popular Electricity (Previous to Jan. 1st, 1912)	1.00	
Pictorial Review	1.00	
Success-National Post	1.00	

CLASS 35.

Current Literature	$3.00	Any one Class 35 with Cultivator $2.65
Lippincott's	3.00	
Review of Reviews	3.00	
Survey (new)	2.00	
Trained Nurse	2.00	
Travel	3.00	
World Today	3.00	
Youth's Companion (Previous to Jan. 1st, 1912. See Class 40)	1.75	

CLASS 40.

Recreation	$3.00	One of Class 40 with Cultivator $2.90
St. Nicholas (new)	3.00	
Youth's Companion (After Jan. 1st, 1912)	2.00	

CLASS 20.

Automobile Topics	$2.00	Any one Class 20 with Cultivator $1.90
Cosmopolitan	1.50	
Good Housekeeping	1.50	
Harper's Bazaar	1.25	
Hoard's Dairyman	1.00	
McCall's 3 yrs. & 8 patterns	1.50	
Munsey's	1.00	
Opportunity	1.50	

CLASS 22.

Out West	$1.50	Any one Class 22 with Cultivator $2.00
Popular Educator	1.25	
Primary Education	1.25	
Teacher's Magazine	1.25	

CLASS 23.

American Magazine	$1.50	Any one Class 23 with Cultivator $2.05
Breeders' Gazette	1.75	
Camera (After Jan. 1st, 1912)	1.50	
Etude (For all music lovers	1.50	
Everybody's Magazine	1.50	
Field & Stream	1.50	
Garden Magazine	1.50	
Good Health	1.50	
Housekeeper	1.50	
McClure's Magazine	1.50	
Metropolitan Magazine	1.50	
Musician	1.50	Any two Class 23 with Cultivator $3.20
National Magazine	1.50	
Pacific Monthly	1.50	
Pearson's Magazine	1.50	
Physical Culture	1.50	
Popular Electricity (After Jan. 1st, 1912)	1.50	
Sunset Magazine	1.50	
Technical World	1.50	
Woman's Home Companion	1.50	
Yachting	2.00	

CLASS 25.

Farm Journal (10 yrs.)	$1.50	Any one Class 25 with Cultivator $2.15
Overland Monthly	1.50	
Violinist	1.50	

CLASS 30.

Ladies' Home Journal	$1.50	Any one Class 30 with Cultivator $2.40
Ladies' World, Modern Priscilla and Pictorial Review	2.25	
Popular Mechanics	1.50	
Saturday Evening Post	1.50	

CLASS 47.

Automobile	$3.00	Any one Class 47 with Cultivator $3.25
Bookman	2.50	
Forest & Stream	3.00	
Motor Age	3.00	

CLASS 50.

American Homes & Gardens (new)	$3.00	Any one Class 50 with Cultivator $3.40
Bit & Spur	3.00	
Education (new)	3.00	
Outing Magazine	3.00	
Scientific American (new)	3.00	

CLASS 70.

Country Life in America	$4.00	Any one Class 70 with Cultivator $4.40
Harper's Magazine	4.00	
Harper's Weekly	4.00	
Keramic Studio and 4 Color Studies (new)	4.00	
North American Review	4.00	
Vogue	4.00	

MISCELLANEOUS.

Ainslee's	$1.80	Class 27
American Motherhood	1.00	Class 19
American Photography	1.50	Class 24
Century Magazine	4.00	Class 30
Cosmopolitan, Good Housekeeping, and World Today (to one address)	6.00	Class 56
Craftsman	3.00	Class 53
Delineator	1.50	Class 21
Dress	3.00	Class 37
Electrician & Mechanic	1.50	Class 24
Hints (The entertainment magazine)	1.00	Class 10
Judge	5.00	Class 95
Leslie's Weekly	5.00	Class 95
Mother' Magazine	.75	Class 10
Musical Courier	5.00	Class 90
Outlook	3.00	Class 60
Primary Plans	1.00	Class 18
Smart Set	3.00	Class 45
Scribner's	3.00	Class 60
World's Work	3.00	Class 37

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A glorious rain has drenched the southland, making prospects excellent for a banner year.

Before long we will be swamped with orders for nursery stock of every description. There is already an unprecedented demand for fruit trees, so it will pay you to

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We have a magnificent stock on hand and are prepared to fill your orders for any quantity.

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Every Variety

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We are authorized propagators and distributors of Luther Burbank's fruit introductions. Our stock of the 1911-12 novelties is limited and we urge your immediate reservation of trees for this season's planting. Among the new novelties offered for the first time this season are the "Goldridge" Apple, "Abundance" Cherry, "Leader" Peach, "National" Peach and the "Conquest" new stoneless Prune. We will be glad to tell you further particulars and prices.

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This is the **Genuine** SMYRNA FIG—the world famous fig of commerce—introduced by us and grown successfully. It is undoubtedly the only fig to plant for shipping, table and drying. Large, delicious and nutty flavor. Superior in all respects and bound to supercede every other sort. We also have the Adriatic types—MISSION, BROWN TURKEY and WHITE ENDICH.

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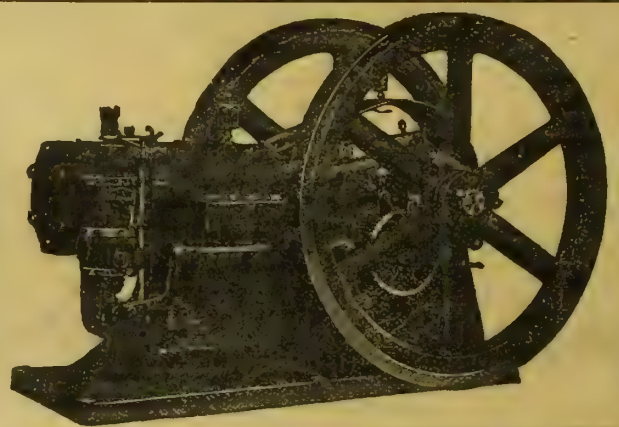

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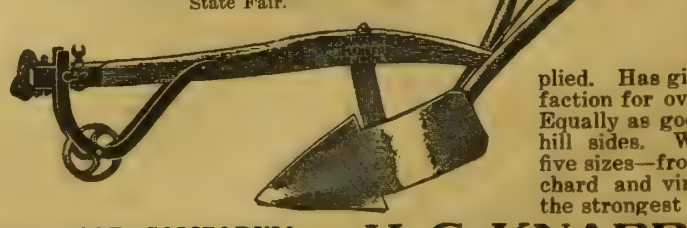
Orchard and Vineyard Plow received first premium at State Fair.



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LOS ANGELES DECEMBER 21, 1911 SAN FRANCISCO

The Olive is Coming to Its Own in California

See Article by Dr. J. Eliot Coit on Leader Page

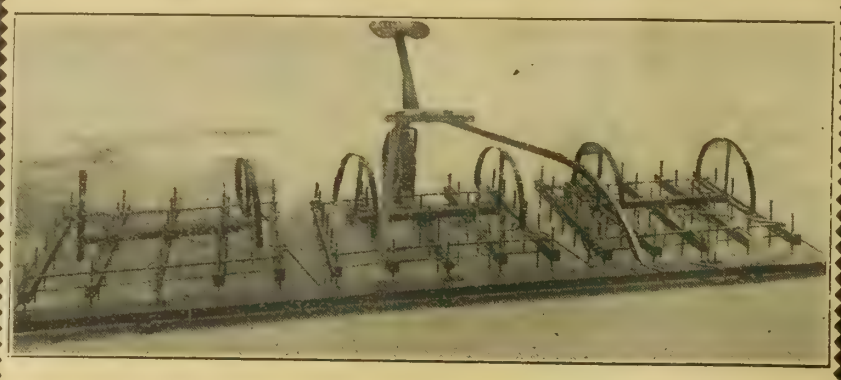
Young Olive Tree, Sylmar. Pruned so as to Protect the Trunk From Sun Scald.

Patriarch Mission Olive Trees, San Diego Mission.
—Photos by Dr. Coit.

THIS MODERN HARROW

—WILL SAVE YOU—

TIME and MONEY



Three section (90 teeth) six-horse harrow

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Points of Superiority

It is automatic. It is self cleaning. Can be ridden. Saves strength and labor. Can be operated by a twelve-year-old boy. To clean press the foot pedal. Frame made of seasoned oak.

PRICES

One section, without cleaning attachment or cart	$10.00
Two sections, without cleaning attachment or cart	19.00
Three sections, without cleaning attachment or cart	27.00
Four sections, without cleaning attachment or cart	36.00
Cleaning attachment, per section	4.50
Riding cart for one, two, three or four sections	10.50
Frame, without teeth, per section	8.50
Draw bar for two sections, $2.00; three or four sections	2.50

You can purchase the self cleaning attachment and put it on your old harrow. Riding cart may be purchased separately.

Would you like to know more about this new harrow, which will lighten farm work and at the same time do it more effectively? We guarantee this harrow to be the most satisfactory and economical on the market. You can do more work and better work with it than with any harrow you ever used.

Send in your order at once or write for further information.

Chilson Automatic Plow Co.

115 Oak St.
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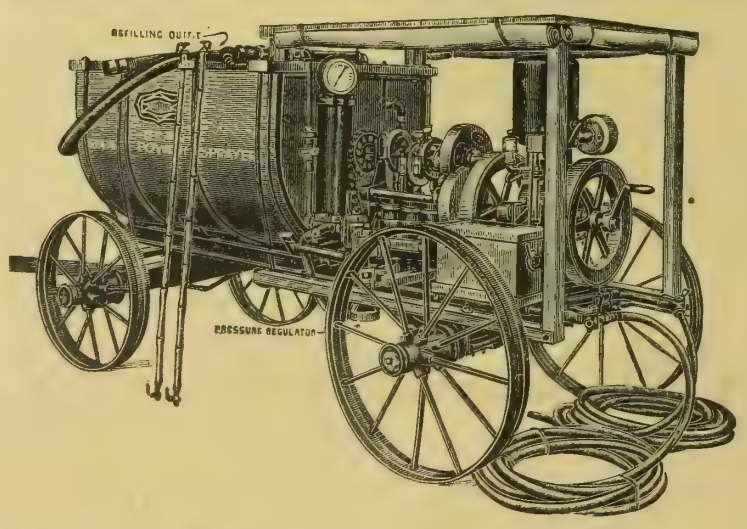

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All Bean Power Outfits are made with steel frame, instead of wood, and all have porcelain-lined cylinders.

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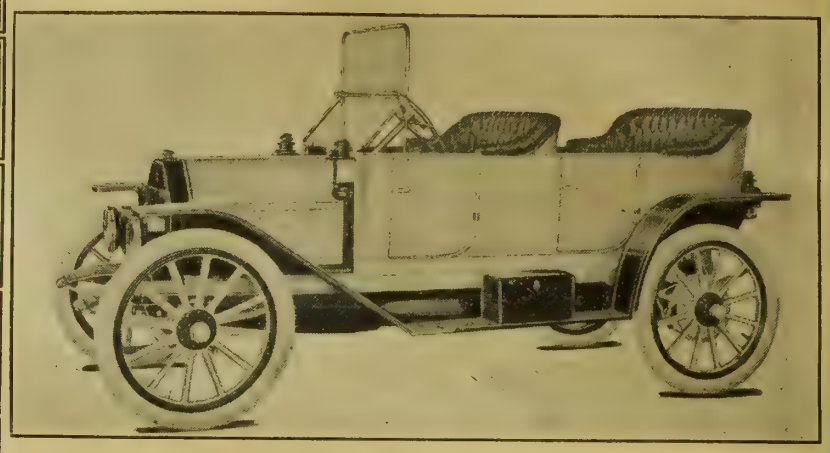

Dreadnought MOLINE "Thirty-Five"

Wins 1911 Chicago Reliability Run

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FOUR PERFECT SCORES

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Again the invincible "Dreadnought," Moline, has demonstrated its "unbeatable" efficiency—its indisputable title to

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For the **second time** it returns the victor in the Annual Chicago Reliability Run, ending at Chicago, Friday, Nov. 3rd, 1911.

Four **Molines** were entered and all four cars finished the 1400 mile five state endurance tour with absolutely perfect road scores.

Four trophies were offered and the **Molines** carried off three out of the four and also stood second for the fourth—the Fuel Economy Cup, with a record of 17½ miles to the gallon throughout the entire run. This invincible car is now the

Winner of Four Consecutive National Contests

Winner of the 1911 Chicago Reliability Run { Capturing Van Sickles Cup, also team trophy, and tying for Touring Trophy

Winner of the 1911 Chicago Reliability Run { Capturing the team trophy and tying for Touring Trophy

Winner of the 1911 Annual Fuel Economy Run { Averaging 19.3 miles per gallon of Gasoline, carrying 5 passengers

Winner of 1910 Annual Glidden Run, Chicago Trophy

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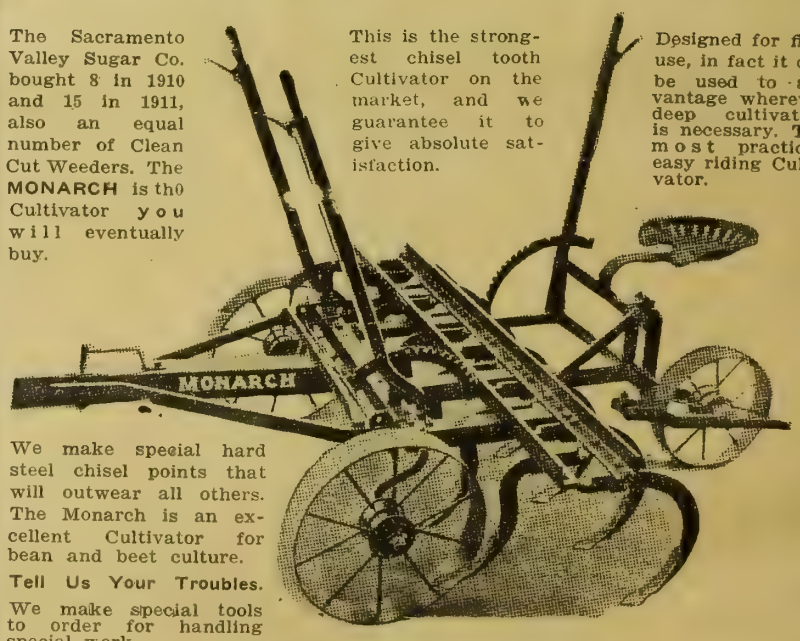

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California Cultivator

Vol. XXXVII. No. 25. LOS ANGELES: THURSDAY, DECEMBER 21, 1911 One Dollar the Year

California Olive Crop of Increasing Importance

By Dr. J. Eliot Coit

The California olive tree has at last lived down a bad reputation which was saddled upon it in the early days in a manner both unjust and unfortunate. Some one who had evidently "been to Europe" freely circulated the advice that the olive should be planted on soils and in situations where other trees could not be grown with profit. As a result of this, many of the early plantings were placed in washes, on stony hillsides or along drives, and no attempt made to water and care for the trees. Of course such trees remained barren and the sight of them for years has impressed on many the erroneous idea that olives are a bad investment.

Those growers, however, who planted their olives on good land and gave them proper care have been rewarded with bountiful crops. A few years ago California olive oil had to compete in the markets with cheap cotton seed oil labeled as olive oil. This was disastrous. But thanks to our national and state pure food laws this outrage has been abated, and as a result the olive industry throughout California is taking on new life. At the present time it is difficult to buy olive nursery stock in large amounts on account of the fact that recent heavy plantings have absorbed the supply. The extension of the ripe pickle market is also partly responsible for this marked stimulation of interest in olive growing. The American pickle market is capable of almost indefinite expansion if the general eastern public can only be educated up to an appreciation of the great superiority of ripe olives as a food over green olives as a condiment.

Olive Orchard, La Mirada.

Soil and Location.

The olive tree is not particular as to the character of soil so long as the quality is good. It requires a deep, fertile, well-drained soil and will bear satisfactory crops whether such a soil is sand, loam, disintegrated granite, or medium adobe. The climatic requirements are similar to those of the orange, for while the tree will stand much more cold than the orange the fruit of most varieties will be ruined by a temperature of 23 degrees F for four hours. Foothill lands for which there is not sufficient water for citrus fruits but enough for olives are very satisfactory.

Olives are especially adapted to the more arid portions of California, such as the great inland valleys of the San Joaquin and the Sacramento, and Imperial Valley. In the hottest of these valleys the trees are free from their most serious pest, the black scale, which is such a nuisance near the coast. The great Imperial Valley with its very fertile soil and cheap water presents an exceptionally inviting field for olive culture.

Propagation and Planting.

Olive varieties are propagated by layering, by grafting or budding upon seedling stocks, or by rooting cuttings; the latter method being by far the most common. The Mission roots readily from tip cuttings under shelter or large stick cuttings in the field. Certain varieties, however, such as the Uvaria, will not root from cuttings and are propagated by budding onto the Mission, Chemlali, or other variety which roots readily. Well grown cuttings should be large enough for field planting after one year's growth in the nursery, but two-year-old trees are usually better.

When olive trees are dug from the rows they must be headed back severely, the branches being cut to six inches. The roots should be carefully protected by damp wrappings and should never under any circumstances be allowed to dry out. The actual setting of the tree differs little from that of any other fruit tree except that it is advisable to plant two or three inches deeper than the tree grew in the nursery. January and February are the best months for planting and twenty-four by thirty feet is a desirable distance to set an orchard of Mission olives. This will require sixty trees to the acre. Manzanillo olives may be set as close as 20x20 feet provided they are kept well pruned.

Cultivation and Irrigation.

Like other tree fruits, olives will respond in proportion to the care they receive. A winter leguminous cover crop plowed under in spring and thorough cultivation throughout the summer will certainly pay whether the orchard is irrigated or not. Along the coast and especially in Ventura and Santa Barbara Counties, there is usually sufficient rain to produce satisfactory crops, although it is a question whether some irrigation would not pay even there. In the interior valleys irrigation is necessary for the production of fruit, although the trees will remain alive should the water fail for several years. The olive does not require as much water as citrus trees; one miner's inch continuous flow for eight acres, provided the soil is fairly retentive, is considered sufficient on desert lands. It is better to give the ground two or three deep soakings during the dry season followed up each time by thorough cultivation than to depend on frequent shallow irrigations with indifferent cultivation. It is very important that the soil should be quite moist during the blossoming period if a heavy setting of fruit is to be expected.

A well-cared-for orchard may be expected to produce some fruit the fourth year and by the fifth year it should be paying expenses. The trees come into full bearing at ten years old and continue to produce from two to five tons per acre as long as they are properly cared for, or for fifty years, at least,—perhaps for much longer. It is said that there are profitable olive orchards in Italy which are more than one hundred years old.

Pruning and Topworking.

Young olive trees should be headed back while in the nursery rows, the largest branches being cut back to six inches in length. In this condition they are transported and planted out in orchard form, no further pruning being done during the first year. It is very important to refrain from pruning or suckering during the first season's growth as the proper development of the new root system depends upon the early growth of a large number of leaves. The shaping of the tree should be begun during the dormant period at the end of the first season's growth. At this time all suckers are removed, wayward branches cut back, and the top headed at about three or four feet from the ground. The single trunk tree has been found more satisfactory than the multiple trunk, shrub-like tree of early day plantings. The second winter all but one upward shoot on each of the framework branches should be cut away. During the third and fourth winters this shortening in should be continued with the idea of checking too rapid an increase in the size of the tree and causing the main branches to grow short, stocky and strong instead of long, bendable and breakable.

In all subsequent pruning it should be borne in mind that the olive bears on wood of the previous year's growth. By light annual pruning new twig formation should be encouraged throughout the body of the tree and along the larger limbs, but such growth should be kept thinned out and not allowed to become too dense and brush-like, as too much shade hinders fruit production. Olive trees should be kept sufficiently low for all the fruit to be gathered from a stepladder. To do this will mean the occasional cutting back of the too ambitious upper branches, which if left alone will soon produce the bulk of the crop at an altitude too great for economical harvesting.

Old orchards of unprofitable varieties may be top-worked to more desirable varieties. This is done by cutting off the large limbs and twig-budding the second year into the young vigorous shoots which arise. Budding should be done in spring just after growth has started. It is wise to avoid giving an old tree too great a shock by top-working it all at one time. One-half of the branches may be budded one year and the other half the following year.

Varieties.

When olives first began to be grown commercially in California a very large number of European varieties were introduced and tested. Only a few proved of value under California conditions, some of which are as follows:

The Manzanillo—A Spanish olive which ripens very early and is of value chiefly for pickles, the oil being undesirable on account of the fact that it solidifies at comparatively high temperatures.

The Sevillano or Queen is a very large olive, suitable for green pickles.

Correggiola, Nevadillo, Pendulina, are good oil olives.

The Columbella is an oil olive which is used chiefly for mixing with other varieties to make the oil lighter in color.

By far the best all-purpose variety, however, for California is the Mission which originated as a seedling at the San Diego Mission. This variety is equally suitable for oil or pickles. The fruit ripens from December 1st to April, the color being jet black when ripe. The tree is quite large in stature, a thrifty grower, and most prolific bearer. About the only objection to it is its habit of ripening the fruits gradually. Often all stages of olives from dead ripe to perfectly green may be found on the same twig at the same time. On this account it is necessary to pick over the trees several times. It appears also that in certain localities the Mission does not set fruit well unless planted with other varieties for the sake of cross-pollination.

There is usually more net profit in making pickles than oil, hence it is good business policy to operate a pickling plant in connection with each oil mill. The olives are graded according to size, the perfect fruits of the largest sizes being made into pickles. Perhaps a good selection of varieties for an olive ranch would be somewhat as follows: 60 per cent Mission, 20 per cent Manzanillo, 10 per cent Pendulina and 10 per cent Columbella.

The Manzanillos will enable the pickling plant to begin operations early in the fall. The Missions will constitute the bulk of the crop. The other two varieties would be planted in occasional rows among the Mission for the sake of cross-pollination and the fruit mixed in with the oil olives for the purpose of securing a better color of the oil.

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Citrus and Tropical Fruits

PROPAGATING THE OLIVE.

By J. W. Mills.

It has been told in the columns of the Cultivator how in foreign countries the olive is sometimes propagated by burying large limbs a few inches below the surface of the ground and with due care removing the sprouts when they attain sufficient size. These sprouts send out roots below the surface of the soil, and as there is a continual succession of sprouts, a log of olive wood will continue to produce rooted slips for some time. The offshoots come from adventitious buds. These are dormant buds distributed promiscuously and irregularly beneath the outer bark. This process is only of passing interest to California growers, as it necessitates the cutting of large branches from desirable trees.

Hardwood cuttings about one foot in length are ordinarily used, taken in February or March and planted with an inch or two of the top exposed. It is the experience of some growers that a longer cutting, about eighteen inches, is better, as the hot days of midsummer tend to dry them out too fast if the lower ends of the cuttings are only ten inches or so beneath the surface. These cuttings should be half an inch or more in diameter.

The most rapid process of growing young olive trees is by the so-called herbaceous method. The hardened tips of the previous summer's growth are used. This means from one to three cuttings taken from each well grown twig. The trees from which these twigs are taken must have been well irrigated and cared for in order to make thrifty cuttings of the right texture. The cuttings should be about three inches long, with two leaves at the apex. This requires the removal of the two lower sets of leaves from the cuttings, as the well grown twig should have about three sets of leaves in the length of three inches. These cuttings should be about one-eighth of an inch in diameter. Experienced propagators tell us that it us useless to use sucker wood for this method, as it fails to make good. This is true of all kinds of suckers. The soft growth at the tips of the twigs that bend easily between the fingers should not be used.

These small cuttings are stuck in coarse sand in flats, about 700 cuttings in a flat, 2 feet by 18 inches. Usually they are placed in glass houses, in which artificial heat is applied, but there is often heavy loss from fungus, owing to the warm, moist atmosphere being an ideal condition for this disease.

One of the most successful growers in Southern California has rooted his olive trees by this method, excepting that he used cold frames with manure for bottom heat. This seems to be an improvement over the hot house method and is much cheaper. The plants must be kept continually moist, not even allowing the surface of the sand to become dry. After the young olive trees grow tops a few inches high they should be transplanted to the field nursery without exposing the roots to the air, and watered as soon as planted. Cuttings should be put in the flats now.

The above described method of growing olive trees was first practiced, as far we know, in Southern California by Kenneth McLennon, first superintendent of the Southern California Substation at Pomona. The idea was suggested to him by Dr. E. W. Hilgard, and immediately revolutionized the olive nursery business.

OROVILLE CITRUS AND OLIVE FAIR

With a most auspicious opening in which the Governor of California participated and even a quorum of the state assembly and the state senate present, Oroville opened its great exposition for 1911. In his address Governor Johnson remarked:

"It is a great honor, as well as a great treat, for us to be with you and to participate in the opening of this great exposition. Tonight all California is congratulating you people of Oroville, for here are found blended the romance of Old California with the progress of New California. Here we find the old romance hand in hand with that spirit that is now making California famous the world over. It is for these reasons that the Chief Executive of the State, and over a quorum of the Senate of the State of California, are here to wish you success as you start upon this exposition. All California rejoices in Oroville's spirit, its accomplishments, and in the prosperity that is your lot now and will be yours to even a greater extent in the future."

And indeed the entire state did take a lively interest in this exposition. Over a million oranges were shown, and in addition many exhibits of olives, apples, nuts, prunes, raisins, mining industry and a thousand and one others which could not help but impress every visitor with the diversity of the Sacramento Valley's productive resources. As to oranges it has been claimed that the Sacramento Valley and its foothills will send out approximately a thousand cars this year, and this fact more than the occasion for merry-makig is what led many to attend the exposition. Of course different days were devoted to different communities, counties or organizations, so that at times the attendance resulted in a crush, but ordinarily the exhibits were so placed that all could see exceptionally well. The principal feature in the center of the great tent was a fountain banked on each side with oranges, and near by was an American flag done in oranges with electric lights answering for stars.

Regarding the community exhibits The Oroville Register says:

Thermalito.

"The words Thermalito and oranges have become practically synonymous. In recognition of the fact that it is one of the most important orange producing sections of the state, the residents of that prosperous and beautiful suburb of Oroville have a magnificent display of their products at the Orange and Olive Exposition. In addition to individual displays, the Butte County Citrus Association has sent from its Thermalito packing house an entire carload of great, golden oranges for display. These oranges, in a great golden mass, surround the fountain in the center of the tent. Massed here and there throughout the building there are many other boxes of fruit. Setting off the oranges are olive boughs and clusters of enormous grapefruit. The display is an impressive one, and by its size illustrates the fact of the commercial importance of the orange industry in Thermalito."

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upon the eastern markets this year, is making an impressive showing at the Orange and Olive Exposition. To give a list of all the things that Palermo is growing would require the publication of a glossary on horticulture and agriculture. Palermo claims that it grows everything and if any one is from Missouri, it has the products right there to show them. Every form of citrus fruit is exhibited. There are olives without number. Every form of deciduous fruit is represented. There are immense vegetables of every kind. And added to this is an exhibit of magnificent Palermo grown tobacco, and also a display of locally grown cotton. In fact, the list of what Palermo is not growing would be a good deal shorter than the list of the various products on display there.

Palermo Colony, which is about twenty-five years old, produces each year in the neighborhood of 500 carloads of oranges and 1000 tons of olives. The fruit this year was first in the eastern market. W. P. Hammon, the largest single producer in the Northern California Thermal Belt, has large holdings there. During the past two years a tremendous interest has been shown in Palermo, and large numbers of homeseekers are now coming into the colony and establishing homes there.

"There are over 1200 acres in the Palermo Colony that are now planted to oranges and olives. There are yet 2000 acres in the colony that are available for cultivation. The land lies under Palermo Ditch, and the supply of water for irrigation is ample. Owing to the large influx of new settlers and the new groves that are being planted, it is certain that the product of Palermo in the next few years will be greatly increased."

Wyandotte.

The claims of the Wyandotte Section are being presented in a most forceful manner at the Orange and Olive Exposition, and it is certain that that section will reap a tremendous advantage from the showing that it is making. In the center of the booth is a model of the pretty Wyandotte school-house, the model being made of dried figs, dried peaches, and olives. Surrounding the model is a real lawn, banked with violets. At the top of the school, symbolic of the patriotism of the community, flies an American flag.

In addition to the orange and olive displays, there is also an extensive exhibit of dried fruits. Wyandotte has attained a state-wide reputation among fruit men for the quality of its peaches, and the tempting display of dried peaches there is evidence of the fact that its reputation is based upon the merit of its fruit.

The display of oranges and olives is most excellent and is proof positive of the adaptability of that fertile section for the culture of citrus fruits and olives, as well as of deciduous fruits. There are also exhibited lemons, limes, figs, nuts, grapefruit, vegetables of almost every kind, and all of a superior quality; also a number of jars of preserved fruit so tempting that it is hard to pass the booth.

Bangor.

The exhibit of the Los Verjeles company is a novel one and consists in part of a soil exhibit, in which branches of olives, laden with berries, have been placed. The whole gives the effect of an olive grove. Vegetables appear between the trees, telling the story far better than words. The display consists of oranges, olives, grapefruit, nuts, and vegetables.

(Continued on Page 669.)

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THE PEAR THRIPS IN CALIFORNIA.

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History.

In the spring of 1904 some of the orchardists of Santa Clara Valley noticed that the blossoms on their fruit trees did not open as they should. A closer inspection showed that the failure of the blossoms was due to the ravages of a minute insect, many specimens of which could be observed by shaking the infested twigs against the hand. This insect was later described by Miss Daniel of the University of California in Entomological News and was named by her the pear thrips (Euthrips pyri) as her specimens were taken from pear trees. Although our earliest authentic records of the insect date only from 1904, we have reliable reports from orchardists and others that the phenomena of the blasted buds had been observed in some sections of the valley several years prior to the date named. Just how long the pest has been present in California and how it came to be here are matters of conjecture. There are strong reasons for believing it to be a native species. On the other hand there are other reasons, probably equally strong, for the belief that it is an introduced pest. Personally, the writer is inclined to the opinion that the insect is a native form, the marvelous prosperity of which during the past few years can be accounted for by an abundant food supply, and other conditions favorable for its rapid development.

Distribution.

The pear thrips is at present generally distributed throughout the fruit growing districts of the Santa Clara Valley, the counties around the San Francisco bay region, and parts of Yolo, Sacramento, and San Joaquin Counties. The insect is spreading rapidly and it is probably only a question of time before it will become generally distributed throughout the deciduous orchards of Northern California. The pear thrips has also been found in England and in the state of New York, where it promises to become a serious pest of the pear tree.

Damage.

The damage done by the pear thrips is caused by its eating and egg laying ravages on the tender tissues of the expanding flower and leaf buds, and later by the attacks of the larvae, or "white thrips," on the young fruit. In badly infested orchards, the work of the pest is so quickly and thoroughly done, that the buds have no chance to open. At the time when the blossoms of these orchards should be at the height of their beauty, a brown, fire-swept appearance is presented, and not until the larvae have disappeared beneath the surface of the ground do the trees appear in their customary spring-time garb of green. Under these conditions practically no fruit is matured. In orchards less affected, much fruit persists on the tree, but does not come to a normal maturity. In the case of prunes and plums, a large percentage of the fruit will present a scabbed appearance when matured. With pears the fruit may be scabbed and curled, or otherwise badly deformed. Although the pear thrips attacks nearly all of the deciduous fruits, most of its damage is done to prunes, pears and cherries. There are but few cases on record of serious damage to peaches, apricots or almonds. The hairy surface of these last named fruits seems to protect them to a certain extent from the voracious appetites and injurious egg laying habits of the species.

The amount of damage done by the pear thrips during the past seven years has been conservatively estimated by agents of the U. S. Department of Agriculture at seven millions of dollars. In this estimate no account is taken of the cost of spraying operation and other means exercised for the control of this insect pest, probably the most serious one that today confronts the deciduous fruit grower of our state.

Life History.

Before any insect pest can be fought intelligently knowledge of its life history is of prime importance.

Early in the spring just when the buds are beginning to swell, the adult thrips make their first appearance on the twigs and buds. In the Santa Clara Valley, the thrips are usually first noticed about the middle of February. From the time of their first appearance, the number of adult thrips in evidence rapidly increases until late February or early March when a rapid decrease is noted. However, the latest thrips may not leave the ground until early April. As many as 400 individuals have been taken at one time from a single cluster bud of cherries or prunes. From 50 to 100 thrips per bud are frequently present throughout a badly infested orchard. By the time the scales on the buds have separated enough for the thrips to squeeze in, in they go, to feed on and otherwise to injure the tender tissue within.

Kipling's line "for the female of the species is more deadly than the male," is incontestably true of the pear thrips, for they are all "lady" bugs. No males have yet been found. Just as soon as an entrance is forced into the bud, the insect begins to feed. Now, thrips do not feed like cows, by biting off and chewing their food, instead, they rasp an opening through the skin of the leaf or blossom tissue, insert their beaks and partake of the life juices of the plant. After a few hearty meals, the thrips are ready to begin another branch of their life activity, that of egg-laying. To lay an egg, a thrips rasps a hole through the skin of the tender plant tissues with her saw-like ovipositor, which is then inserted in the opening as deeply as possible. An egg is then passed through the ovipositor and imbedded in the growing tissue. A great deal of the damage caused by thrips is due to the effects of ovipositing, especially in the case of cherries and other fruits with long, tender stems. A few thrips eggs placed in a cherry stem will so weaken it that the fruit is caused to drop. Thrips lay better than Petaluma chickens. From 25 to 50 eggs per thrips are laid during the active adult stage of three or four weeks' duration, a record of which any hen might well be proud.

The eggs themselves are small, bean-shaped objects, from which the young thrips, the so-called "white thrips," emerge in from four to fifteen days. Usually about eight days are required. The larvae feed on the blossoms, opening buds and young fruit in much the same way as the adults. They increase rapidly in size and at the end

of three weeks become full grown and fall to the ground. Here they penetrate the soft layers of soil and enter the compact sub-soil or plow pan, to the depth of three or four inches. The depth at which the larvae come to rest depends largely upon soil conditions. in loose sandy or gravelly soil, a depth of two or three feet is sometimes attained, but in heavier, more compact soils, the majority of the thrips are found within twelve to fourteen inches of the surface. As soon as the thrips have come to rest, they form a little cell about themselves and remain quiescent throughout the rest of their larval and pupal stages. Pupation takes place in September, and pupae are most abundant in the ground during October and November. Throughout the latter months, and in December, the pupae transform to adults, which gradually become more active, as the season advances, until they are ready to emerge at the first indications of spring. The number of adult thrips per square foot of soil varies, of course with the intensity of the infestation. As many as 4000 thrips per square foot have been taken from badly infested ground. From 200 to 500 thrips per square foot are enough to create a serious amount of injury.

* * *

CONTROL METHODS.

The control of the pear thrips was one of the most difficult problems ever presented to economic entomologists for solution. Ever since 1905 a large part of the time of from one to seven experts of the U. S. Department of Agriculture, besides the time of several other economic entomologists, has been devoted to a study of this pest, and the means of controlling it. As a result of the work of these investigators, have come two methods of control, or rather, spray formulas,—the government formula and the lime spray—both of which seem to give good results under certain conditions.

Soil Fumigants and Cultivation.

As the greater part of the thrips' life is passed in the ground, it was at first thought that the insect could be best attacked there. To this end, soil fumigants, fertilizers and the flooding of the ground for various periods was resorted to, with but little encouragement. Any fumigant that would kill the thrips was either too difficult of application or too expensive to be practical. The thrips seemed to thrive in water soaked ground and complete immersion for periods of six days or more had absolutely no effect on their subsequent activities. The results attending cultivation experiments were more pronounced and by thorough plowing and cross-plowing the number of thrips in the soil of some of the orchards in the Santa Clara Valley was reduced from 50 to 70 per cent. Plowing to be at all effective must be done when the thrips are in the pupal stage, as they are then very easily injured and the slightest disturbance will kill them. The plow must also be set deep enough to break up the first three or four inches of the hard soil or plow-pan. To do this in most orchards in the Santa Clara Valley, the furrows turned must be at least eight or ten inches in thickness. The difficulties attending this depth of plowing are obvious to any practical orchardist. After the land is plowed and cross-plowed, it must be well harrowed, in order thoroughly to break up and pulverize the clods and lumps. In soils where a large proportion of the thrips are found at a depth of 16 inches or more, the futility of this treatment is apparent. Even where more than half the thrips present are killed, enough survivors may be left to cause a total failure of the crop. Thorough cultivation can do no harm and in many cases the orchard will be benefited both from the direct effects of the cultivation and indirectly from the thrips killed. In badly infested orchards, however, plowing and cultivation can be relied on at best only as a supplement to a more efficient control of spraying.

Spraying.

In the early experiments of the department, a large number of different insecticidal sprays were tried out. All poison sprays were failures, because of the peculiar feeding methods of the thrips. Sticky sprays were difficult of application, and did not long retain their sticky character after application. Dust sprays failed to kill. Sprays, whose insecticidal properties depend on caustic soda, carbolic acid and other caustic materials, were a success in so far as killing the thrips went, but their use was inhibited because of their harmful effects on the blossoms, foliage and fruit. Distillate oil emulsions, when sufficiently strong, were effective in killing the thrips. They also injured the foliage. Early in the work the efficacy of various tobacco washes was noted, but the insecticidal powers of these washes were soon dissipated by evaporation, and at best they lack the quality of penetration, that is, to force them into the expanding buds was difficult. Finally came the idea of combining a weak distillate oil emulsion and a tobacco wash. From this idea was developed the government formula which is today giving good success applied in the right way under favorable conditions.

Government Formula.

The formula which has given the best results is made up of 3 per cent distillate oil emulsion, to which is added from 1 to 1 2-3 per cent tobacco extract No. 1 (Blackleaf containing 2.75 per cent nicotine) or tobacco extract No. 2 (sulphate of nicotine or Blackleaf 40) which is 40 per cent nicotine, at the rate of one part to from 1500 to 2000 parts of the spray mixture. The distillate oil emulsion may be obtained from several dealers in chemical and spraying supplies. or may be made at home. By the use of the home-made emulsion, a considerable proportion of the cost of spraying is saved, and what is more important, the quality of the emulsion is above reproach when good materials are properly used in its manufacture. The stock emulsion can be made several weeks previous to the time of spraying if necessary. The first step in the manufacture of the emulsion is the making of the soap according to the following formula, which will give, when properly mixed, about 40 pounds of fairly firm soap:

Water	6 gallons
Lye, 98 per cent	2 pounds
Fish oil	1½ gallons

To make the soap: Place the water in the kettle or cauldron, and add the lye. When the lye has been dissolved and the water is boiling hot, add the fish oil. Boil the mixture gently for one and one-half or two hours, or until it presents a ropy, stringy effect when allowed to drip from the ladle. One of the secrets of success in the making of this soap is the use of the genuine fish or whale oil. A mixture of fish and vegetable oil will not do. This fact should be impressed on the mind of the dealer from whom the oil is purchased, so that no attempt at substitution will be made. With oil

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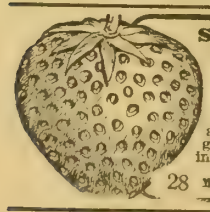

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at 35 cents per gallon the cost of the soap should be about one and two-thirds cents per pound.

To make the distillate oil stock emulsion, the following formula, or some multiple thereof is used:

Hot water	12 gallons
Fish or whale oil soap	30 pounds
Distillate oil	20 gallons

No one should attempt to make this emulsion without the use of a power sprayer with a good agitator. For a 200-gallon tank, five times the amount of ingredients named above are necessary, if a full 200 gallons of stock is to be made. The water should be boiling hot when put into the tank. As soon as the water is in, the agitator must be started and the soap immediately added. Just as soon as the soap is dissolved, the oil must be slowly added, in the meantime keeping the agitator at work. After the oil is well mixed with the soap and water, the contents of the tank should be passed through the nozzles at a good pressure (175 to 200 lbs.) into storage tanks or barrels. The passage through the nozzles is very essential for the securing of a good emulsion. Other essential points are, reasonably exact measurements, boiling heat for the water, and the right kind of distillate. In fact, good results in the orchard depend absolutely on the quality of the distillate. The oil should test 32 to 34 per cent (Beaume) and should be the raw, untreated distillate, comparatively free from naptha and with a high flash point. Indeed, the best results are derived from the use of a raw, short-cut distillate, that is, a distillate from which the lighter hydro-carbons, gasoline, naptha, etc., have been removed. Oils of this character are put out particularly by some of the Bakersfield and Coalinga oil companies.

Where the water is unusually hard, the use of caustic soda or more soap than the formula calls for may be necessary in order to soften it.

The stock emulsion made according to the foregoing formula contains about 55 per cent of oil, and should cost the maker about 5 cents per gallon. To make a 3 per cent emulsion for use in the orchard, about 5½ gallons of stock solution should be used for each 100-gallon tank. The stock emulsion should be first placed in the tank, and the water should be added under constant agitation. The tobacco extract should be the last ingredient added to the mixture. Owing probably to different climatic conditions, the use of a larger amount of tobacco extract is necessary in the interior valleys than in the Santa Clara Valley. In the interior valleys, Extract No. 1 should be used at the rate of one part to sixty. No. 2 is used at the rate of one part to 1500, or a little more than a pint of extract to a 200 gallon tank full of spray mixture. In the Santa Clara Valley, good results are secured by the use of smaller amounts. No. 1 may be diluted 1 to 75, and No. 2 1 to 2000.

Treatment Advocated.

Where the orchards are badly infested but three applications are necessary except in the case of pear orchards, where more may be advisable. The first two treatments are for the adults, the second for the larvae. The first application should be made just as the thrips begin to enter the separating buds. In this treatment, as in all others, a rather coarse, driving spray should be used, at a pressure of not less than 175 pounds to the square inch. Particular pains should be taken to shoot the spray into the expanding buds. To do this the nozzle must be held rather closer than usual to the twigs and buds. Except with very small trees, a tower on the spray outfit and a third lead of hose are absolutely necessary.

The second application should be made from four to ten days later when the tips of the petals begin to appear. This treatment should be made in the same thorough manner as the first. The third treatment for the larvae should be made after the petals have fallen and particular pains should be taken to reach the under side of the young leaves before the upper sides are touched. If the upper side is hit first by the spray, the larger part of the larvae will be knocked to the ground without coming in contact with the spray. A somewhat finer spray may be used in this treatment than in the first two. So far as possible, spraying when the trees are in full bloom should be avoided.

The treatment above outlined is particularly applicable to prunes, cherries and pears, when the bloom is fairly uniform in its development. In orchards where the bloom is irregular in making its appearance, or is spread over a long time, some modification in the outlined schedule may be necessary; that is, more spraying may be required, or it may be impossible not to spray when some of the bloom is in evidence. Good results from this treatment have been obtained upon cherries, pears and prunes. However, the pest is more difficult to control on pears than on prunes, and on prunes than on cherries.

Results of Treatment.

Early in the government investigations, the fact became plain to the men in charge of the work that not all the shortage in the Santa Clara Valley was due to the thrips. A poor physical condition of the trees, caused by a lack of plant food or water, was responsible for much of the damage laid by some of the thrips. The ravages of the thrips were also more pronounced on these poorly nourished trees. Accordingly the application of fertilizers to some of the thrips infested orchards seemed desirable. Such applications were made in much of the demonstration work in the Santa Clara Valley.

The writer of this paper is greatly indebted to Paul R. Jones of the U. S. Department of Agriculture for the following facts and figures relating to the demonstration work for the season of 1911.

In connection with this work it is only fair to state that the thrips conditions in the Santa Clara Valley this year were not as bad as in some previous years. This state of affairs may be accounted for by the heavy rains at blossoming time in 1910, which probably washed many immature thrips to the ground where they undoubtedly perished, and by the abnormally dry fall which may have interfered with the proper development of the insect at the time of pupation and change to the adult form. In consequence of these conditions, the results of the demonstration here detailed are not so pronounced as they would have been had the thrips infestations been as severe as was anticipated.

In the prune orchard of Mr. H. Curry three plats were laid off. Plat No. 1 was sprayed twice and fertilized. Plat No. 2 was sprayed twice. Plat No. 3 received no treatment. The cost of the two spray applications was $13 per acre, and $20 worth of fertilizer was used on Plat No. 1. The yield of this plat was at the rate of 635 boxes of green prunes per acre. Making proper allowance for shrinkage in curing, and

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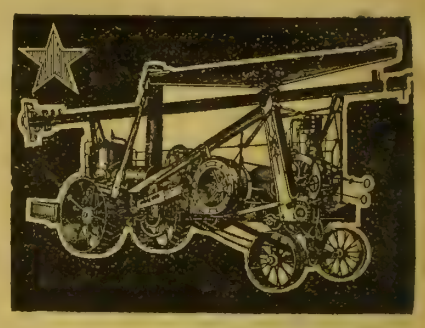

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figuring on a 5.75 cent basis price per pound for the dried fruit, the product of this plat was worth $513 per acre. The yield from Plat No. 2, sprayed only, was 593 boxes per acre, worth $471; from Plat No. 3 the check 486 boxes per acre were obtained, valued at $391. The gain due to spraying in plot 2 was $67 per acre, and on plot 1, after making allowances for the $20 worth of fertilizer used, $89. The foregoing figures may not sound very impressive, but it should be remembered that the effect of the treatment is cumulative, and the next year the sprayed portion of Mr. Curry's orchard ought to be comparatively free from thrips. On the other hand, the unsprayed portion will probably be badly affected, unless all signs of an abundant crop of thrips next year fail.

Mr. Fellows, of the Quito ranch, is also an earnest believer in the efficacy of the spray in his prune orchard. During the past season he sprayed his entire prune orchard of 250 acres twice, and 195 acres of it three times. The total cost of his spraying operation on 195 acres was $2577.82, divided as follows:

Labor, 235 days, $2 per day	$ 470.00
Horses, 210 days, $1 per horse	210.00
Commercial emulsion, 89½ bbls. at $6.10	581.75
Blackleaf, 55½ 5-gal. cans, 90c	249.79
Blackleaf 40, 45.2 at $12.50 gal.	565.00
Gasoline, 144 gals. at 15½c	22.32
Lubricating oil, 20 gal. at 45c	9.00
Cartage	45.00
Interest and depreciation of outfit	425.00
	$2,577.82

The Blackleaf was used at the rate of one to 100; Blackleaf 40 used at the rate of one to 2000. There were 90 trees to the acre. Each application cost nearly five cents per tree, or about $13.50 per acre for the season's spraying of three applications. The yield of the 195 acres for the year 1910 was 222 tons of green fruit, a large part of which was scabby. The yield from same 195 acres in 1911 was 648 tons green fruit of good quality. Figured on a 5 per cent basis, making an allowance of 2½ to 1, the 1910 crop was worth $11,800, or about $60 per acre. The 1911 crop was worth $34,450 or about $176 per acre. Mr. Fellows attributes this net gain of $100 per acre almost entirely to spraying. He is going to purchase two more spray outfits, making six in all, so that if necessary, he will be able to make timely applications on the entire orchard the coming spring.

Even more decisive results on pears than on prunes in the county of Santa Clara could be shown were there time to do so.

Mr. T. W. Dean, Courtland, California, is another grower who has made use of the government formula. He made good thorough applications on pears, peaches, plums and cherries. He does not fear the pest in plums, peaches, or cherries, and is confident that he can control it on the pears when the buds open uniformly. He notes that his crop from the tops of the pear trees (he did not have a tower on his spray outfit) was inferior in quality and quantity to that of the lower limbs, which received a thorough application of the spray.

Instances of the sort, given in the foregoing, could be multiplied indefinitely. In this connection, however, it is only fair to state that some men who have sprayed conscientiously and thoroughly have not obtained the desired results during the past season, particularly on pears. However, these individuals and others should bear in mind that the results are cumulative, and that another year of spraying will probably place the pest under control in their orchards.

Lime Spray.

Mr. Morris, the county horticultural commissioner of Santa Clara County, reports that he has had excellent results on pears with a simple whitewash spray. His solution is made by slaking lime in water, using as concentrated a solution as it is possible to apply, from 75 to 100 pounds of lime to each 100 gallons of water. Care should be taken to secure first-class lime and to slake it well. The cost of this spray all made up, should not exceed one cent per gallon. The spray should be applied just as the buds begin to separate and the entire surface of the tree should be covered. One application is sufficient. Although Mr. Morris gives no exact statement of the results, he assures me that eight times as many pears per tree were taken from the sprayed trees as from the unsprayed trees.

Testing for Thrips.

Many growers are puzzled to know whether or not their ground is infested with thrips. For the benefit of these and others who wish to know just how badly their soil is infested, the government method of determining the intensity of the infestation will be demonstrated. To secure a sample of the soil, the loose layer, to a depth of three or four inches, is scraped away, and a five gallon oil can, from which the top has been removed, is inverted on the hard soil thus exposed. The soil is then removed from the edges of the can, which is sunk to its full capacity over a section of soil. When the can is sunk as deeply as possible, the inclosed section of soil is cut off at the bottom, the can turned right side up and transported with its contents to the place of examination. A section of the soil six inches square is then examined by passing small quantities through a screen.

If the thrips are in the larval or pupal stage, black paper is used to collect the soil particles passed through the screen. If the insect is in the adult stage, white paper is better. A record is kept of the number found from each inch of soil examined, from which an estimate of the number of thrips per square foot may be obtained.

Summary.

If your orchard is badly infested, you ought to spray early, thoroughly and late. The results the first year may not be decisive, but at the end of two years of intelligent spraying, the pest will be under control.

FARMERS' DIARY.

A novel form of diary has been issued by the Rein & Sons Company, Houston, Texas. It is called "The Farmers' General Diary and Record," and if the blank pages in the book are fully filled in a record of great value will be possessed by the farmer at the end of the year. The text taken by the author is "Father, forgive them, they know not what they do," and he thinks of all the classes of ever struggling, hard-working humanity the farmer class is the one most in need of that forgiveness. The charge is that while the farmer as a class is as brainy as any other, he has not arrived at the stage of fully using his intelligence, especially as to knowledge of details of his own place. There is a blank for every day in the year, for entering weather, temperature, precipitation, condition of soil, conditions of crops in general, number of men employed, cost, amount of work done on the farm, any product marketed, details of expenditure, and other items too numerous here to mention. There is another sheet of 52 blanks for Sunday and weekly recapitulation; another sheet for monthly record and balance sheet; another sheet of annual crop record recapitulation. The only objection that we can see to the book is that it is rather too elaborate for many farmers.

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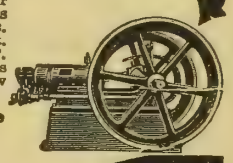

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Recent test by Prof. Rogers, Lewis Institute, Chicago, and Prof. McKergow, McGill University Montreal, on leading oil-burning lamps show the Aladdin Mantle Lamp is the most economical and gives over **twice as much light** as the **Rayo** and other lamps tested. It is odorless, safe, clean, noiseless. Better light than gas or electric. Every Aladdin Lamp fully guaranteed and protected by patents in nearly every country on earth. Our **burners** fit your old lamps. To introduce the Aladdin, we will give

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Brief Comment on Annual Report of Secretary of Agriculture.

When the cattle fever tick is destroyed in the Southern States the country will get much more meat from that section, and the producing of it will build up the farms there.

The hog cholera serum developed in this department is successful where it is properly made and applied.

Would it be asking too much of our universities to have them educate more plant pathologists and road engineers?

Every country in the world that has diseased plants that can not be sold at home can ship them to us. This results in great loss. The chestnut disease here is an illustration.

After years of experimentation we find we can grow Egyptian cotton in Southern California and bulbs in the state of Washington.

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The schools want more of our publications than we have to give them.

Seven hundred and fifty million dollars is the best estimate for poultry products this year.

The day is not far distant when we will cease to import potash.

A serious pest in the South is the crayfish; carbon bisulphide is a sure remedy.

We are sending explorers to the ends of the earth for new plants—and getting them.

The phosphates are abundant in our country for all possible uses. Florida, Kentucky, Tennessee and Idaho may be mentioned as depositories.

If good roads from the producer to the consumer were general, the benefits to both would be considerable.

When a foreign insect invades, our scientists seek its enemy where it came from. The natural enemy of the boll weevil was an ant that could not endure our winters, but the native ant is getting busy.

The experiment stations of the several states are doing better work each succeeding year, the scientists are maturing, and the people are appreciating.

The object lesson in agriculture is the best teacher; we had 60,000 of them at work last year.

Six hundred thousand short tons of beet sugar were made last year in 67 factories. There is an estimated world's shortage of 1,600,000 long tons of sugar this year.

The consumer pays a dollar for food; the farmer gets less than fifty cents for it. Who gets the rest?

All government agencies that conserve public health should be grouped together in one bureau.

The Department of Agriculture has had success in the Southern States through object lessons in the fields, where the best southern farmers in their counties were the instructors. This method should be organized in all the states along lines of greatest necessity.

Our systems of renting land are faulty and result in soil robbing; where the renter can not provide domestic animals, the owner should arrange to furnish them, so that rotation of crops may be had, and hay and grains may be fed on the farm.

Irrigation will bring maximum crops while the land is new and full of plant food; but where the crops are sold year by year irrigation will not of itself assure good results.

Alaska will some day provide farmers in lower latitudes with grain seeds superior to what they can grow at home.

The corn crop is moving northward by seed selection.

The southern farm boy is showing the way to grow more of all crops on an acre.

Educate the farmer's boy toward a more valuable life on the farm.

Uplift the farm home through the education of the farmer's daughter toward greater usefulness and attractiveness in the farm home.

Save all the liquid fertiilzers on the farm, in cisterns, to be applied where crops are to grow; this will recover the greatest farm waste of our times.

There is great promise in the fact that whole classes of graduates of agricultural colleges go back to the farms, having learned how to make them profitable.

Our foresters are learning by experiments how to reforest 30,000 acres in a year; 10 times as much must be planted annually to cover all the bare acres in a generation. It will be done.

There should be publicity regarding the cold storage of foods, through monthly reports to some Federal authority that would give them to the press, to the end that the people might know to what extent foods were being withheld from consumption.

EVERY FARMER HIS OWN PAINTER.

Any man can do an average job of painting, and can thereby not only improve the appearance of his place, but can add greatly to the durability of the buildings.

The average farmer, if there is such a thing, seems to think that paint is used solely for ornament, and he is of all men most keenly practical, he eschews what he regards as an unprofitable luxury. It is perhaps the rule rather than the exception in some sections to see houses and agricultural implements sadly in need of repainting.

Of course paint does improve the appearance of property, but it is far more useful as a protector rather than an ornament. The expenditure of a small amount of money and time in painting a valuable piece of farm machinery or a building will add greatly to the length of its life. Another useful object accomplished by painting is the improved sanitary conditions of buildings and outhouses. The cost of such work is small, the necessary equipment not expensive, and with proper care will last a long time.

In order to supply information which will enable the farmer to purchase the paints economically and apply them intelligently and to the best advantage, experts in the Bureau of Chemistry have investigated the subject and prepared Farmers Bulletin No. 474, calling attention to the economic importance of painting farm buildings and equipment and giving details as to the cost, purchase and care of brushes, cost of the ingredients needed, how to mix and apply them.

Paint conveys to the casual reader the idea of a mixture of pigment with linseed oil, but the general conception

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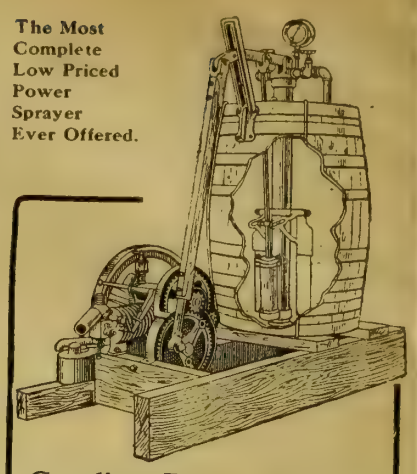

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MY WORD FOR IT

My freebook SCIENCE AND AGRICULTURE. tells of MOON'S INFLUENCE over plant growth. Planters of truck for market sale, or those with home gardens should not miss this instructive book. 15,000 copies already mailed—let me send you one. A living from city garden growing tomatoes early. Write today

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$1000 PER ACRE FROM 20 TOMATOES

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One Man can run it.

Earn $2000.00 a year extra money, besides your regular farm work, with the

Improved Powers Boring and Drilling Machine. Bores a well 100 ft. deep in 10 hours. One man can run it; a team operates it and easily moves it over any road. Bores everything except hard rock, and it drills that. No tower or staking; rotates its own drill. Easy terms; write for catalog.

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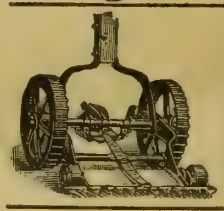

THE CLIPPER

There are three things that destroy your lawns Dandelions, Buck Plantain, and Crab Grass.

In one season the Clipper will drive them all out.

Clipper Lawn Mower Co Dixon, Illinois.

EUCALYPTUS PLANTS

Globulus, Rostrata and Tereticornis. Ornamental Trees and Burbank Spineless Cactus. Well-grown stock. Address

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Santa Barbara County raised 295,000 tons of sugar beets last year.

of the word includes both whitewash and calcimine, but not varnish, and the bulletin gives several very valuable recipes for making both of those excellent coatings for both the out and inside of buildings.

The Secretary, in addition to urging the proper use of paints for both useful and ornamental purposes, for he does not think anything too good or attractive for the farm homes, emphasizes several precautions: "Do not use any paint containing compounds of lead about stables or outbuildings where the fumes from decaying organic matter occur, since these gases are likely to darken the lead paints. Do not use with lead compounds any pigment which may liberate compounds of sulphur. For example, ultramarine blue white contains sulphur in a form in which it may be set free, is a beautiful and very permanent blue, and may be used with zinc white, but should not be used with white lead or any other lead pigments. Prussian blue, on the contrary, does not contain sulphur and may be used with lead pigments.

"Remember that turpentine and benzine are very inflammable, and especial precautions should be taken not to bring paint containing these substances near any light or open fire.

"Many pigments are poisonous, and the workman should be particularly careful to remove all paint stains from the skin, and not under any circumstances allow any of it to get into his mouth. A man should not eat in the same clothes in which he has been painting, and before eating should not only change his clothes but wash all paint stains from his skin. It is not advisable to use turpentine or benzine in removing paint stains from the hands, but by oiling thoroughly with linseed oil, or, in fact, with any fatty oil, and then thoroughly washing with soap, the paint may be removed, provided it has not been allowed to dry too thoroughly on the hands."

JAPANESE VEGETABLE ISINGLASS

By Consul George N. West, Kobe.

Japanese isinglass, or agar-agar, is made from six kinds of seaweed, the best qualities of which are found on the coasts of the provinces of Izu, Tosa and Sado and are known as Izu, Nanbu, Misaki, Onikusa, Egokusa and Hirakusa. (Samples of the various kinds of seaweed mentioned are filed in the Bureau of Manufactures.) At the close of summer the seaweed is bought up by wholesale dealers in Osaka and stored there in godowns until sold to the manufacturers. The different seaweeds are sold for the following prices per 10 kwan (kwan equals 8.267 pounds avoirdupois): Izu, $8.50; Nanbu, $8; Misaki, $6.75; Hirakusa, $3.75; Egokusa, $7.50; Onikusa, $5.50.

The manufacture of vegetable isinglass, as its Japanese name, kanten (cold climate), would imply, can take place only in autumn and winter, as warmth and rain spoil the product. The process is simple, and the utensils employed are primitive. The factories are located at Ibaraki, in the mountains between Osaka and Kyoto, and at Nishinomiya, between Osaka and Kobe.

To make 4,000 kin (1 kin equals 1.3227 pounds avoirdupois) of isinglass 2,050 kwan of seaweed, of a value of $1,410, are required. Coolie hire and other expenses are about $350, which, added to the cost of the seaweed, makes the total expense incurred in producing 4,000 kin (5,291 pounds) of isinglass $1,760.

The Method of Manufacture.

The process of manufacture may be described as follows: The seaweed is first crushed, each kind separately, to remove shells or other adhering matter, and then washed clean with water. The washed seaweed is placed on a mat and dried until its color becomes white by the action of the sun, frost and dew. This operation takes place during September and October, and when bleached the weight of the seaweed is decreased nearly one-half. After bleaching, the six kinds of seaweed—in the proportion of Izu, 4; Egokusa, 4; Misaki, 3; Hirakusa, 3; Nanbu, 4; and Onikusa, 2—are all put together in a boiler and cooked for about fourteen hours, until they have become soluble. The liquid is then strained through a sack and a box with a bamboo sieve on one side, from which it runs into a container. From the container the liquid is ladled into trays about 3½ feet long and 3 inches deep.

After remaining in the trays about twelve hours these are placed on a low stand, and the isinglass is cut into strips three inches wide and fourteen inches long, with a knife and ruler. These strips are then put into a long closed wooden box (the ends of which are three inches square, one end being open and one filled in with a wire sieve) and pushed through the sieve end in the form of long fine strips. The isinglass is then placed on a low stand, which is covered with a clean mat, and dried in the sun during the day and frozen during the night for two or three weeks during January and February, being watered at midnight. The quality of the isinglass depends upon the weather during this time, the best being made when it is clear and cold, the poorest when it is warm and rainy. When the isinglass is bleached sufficiently, it is compressed and packed in Japanese matting, tied with a straw rope.

The very best quality is all exported to China, the No. 1 quality that is shipped to America being equal to the No. 2 that goes to China.—Consular Reports.

TURKISH OLIVE CROP.

By Consul General Gabriel B. Ravndal, Constantinople.

The 1911 olive crop is excellent over the entire district of the Gulf of Mudania-Ghemlik, on the southeastern arm of the Sea of Marmora, which is famous for olives. It is believed that it will amount to 28,283,305 pounds for the district of Mudania and 42,425,707 pounds for the district of Ghemlik and Yeni Bazar. In the latter district the crop would have been still larger, but the fruit was injured by hail and the production was somewhat diminished.

The quality is excellent, as the fruit was free from disease during its growth. It is natural, of course, that owing to the great abundance the size of the olives will be small.

Three-fourths of these olives will be pickled for eating purposes and the remainder used for oil. In the whole district of the Gulf of Mudania-Ghemlik the production of oil this year will amount to between 3,400,000 and 4,300,000 pounds. Three-fourths of this oil will be consumed here and perhaps one-fourth will be exported.

LARGE OLIVE CROP IN GREECE.

Consul General William H. Gale, of Athens, reports that the gathering of the olive crop has begun, and it is said to be the best produced in Greece for forty years as to both quality and quantity. It is estimated that the yield of oil will be from 75,000,000 to 90,000,000 okes 26,000,000 to 32,000,000 gallons.

MEXICAN LAND

EVERY DAY BRINGS THE PANAMA CANAL NEARER TO COMPLETION.

WHAT ARE YOU DOING TO REAP A PROFIT?

ARE YOU MAKING AN INVESTMENT WHERE YOUR $$$ WILL EARN MORE $$$$$$$$ EVEN BEFORE THE CANAL IS COMPLETED?

THE WEST COAST OF MEXICO WILL BE BENEFITED MORE BY THE CANAL THAN ANY OTHER SECTION.

NOW THE QUESTION IS:

WHAT PART WILL ADVANCE THE QUICKEST?

ANSWER: THAT PART WHICH HAS THE MOST NATURAL ADVANTAGES AND A CLIMATE SUITABLE FOR AMERICAN SETTLERS.

THE CULIACAN VALLEY is just below the frost line, yet far enough north to avoid the disagreeable tropical features.

Ample rainfall for one crop and some years two.

Abundant water for irrigation when necessary.

A larger variety of products than any other section of the continent.

Markets for everything.

Excellent transportation facilities.

Cheap and efficient labor.

In the Culiacan Valley the American Farmer can raise the products he understands best and turn a portion of his land into a money making tropical garden.

The soils are deep and rich; no fertilization necessary for fifty years.

FARM LANDS AT $10.00 TO $25.00 AN ACRE ARE SELLING FAR BELOW THEIR INTRINSIC VALUE.

Fibre and range land at lower prices still.

THERE IS A FORTUNE FOR YOU IN SINALOA IF YOU SELECT YOUR LAND WITH DUE REGARD TO SOIL AND LOCATION.

A PLEASANT, HAPPY LIFE WHILE MAKING THE FORTUNE.

If you are interested in bettering your condition or investing where the largest returns compatible with safety are to be had, our literature will interest you.

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REX

The world-famed fruit tree spray is on sale in all parts of the U. S. and Canada. It is the household word among the fruit growers of the Nation. Now is the time to prune and spray your trees with REX to insure good, abundant and clean fruit for the coming season. Ask your dealer or write to our California headquarters at Benicia.

The California Rex Spray Company is also state agent for the well known BOLTON ORCHARD HEATER. In order to be absolutely sure of saving the crop, orchards should be protected against frost.

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California Rex Spray Co.

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Valencia Orange

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Eureka Lemon Trees

on sour stock root.

Grown without fertilizers, hardy and free from scale.
Eucalyptus in large or small quantities.

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Save Money By Buying This Good Second-Hand Pipe

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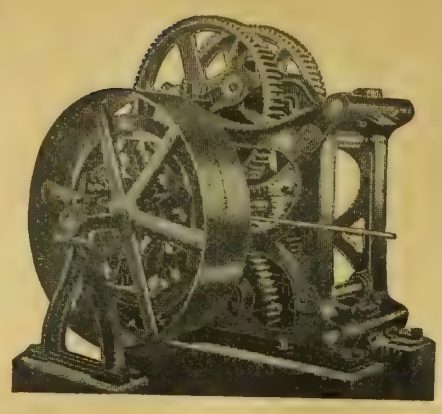

This cut is a side-view of the New Pomono Pump showing friction pulley and out Board bearing

The practical and modern methods employed in making these pumps, and all parts, through the many successful years of this firm's business career, have been the means of establishing a solid reputation for POMONA PUMPS.

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If you want a DEPENDABLE and ECONOMICAL Pump, write us for more detailed information about the "Pomona Deep Well Pump."

PROMPT REPAIRS

One of the great advantages of using Pomona Pumps is the ability to secure repair parts promptly should you ever need them. We carry in stock all needed parts and can furnish same or send men to make repairs at short notice.

Catalogue 51 C sent FREE on request

Pomona Man'fg Co.

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Will Interest the Irrigator

Pump has Water Sealed Gland, Enclosed Balanced Impellor. Will not cut out by sand. Can be placed in a smaller pit than any other pump. Our Bulletin, C12, tells all about it. The pump can be seen in operation at our places of business. We have a permanent branch house at

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Krogh New Type Vertical Water Balanced Pump

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100 Williams Street, New York. Works: Perth Amboy, N. J.

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Equivalent to 128-129% Cyanide Potassium, for generating Hydrocyanic Gas

The only positive eradicator of the **San Jose Scale, Red** and **Black Scale** and other insect pests.

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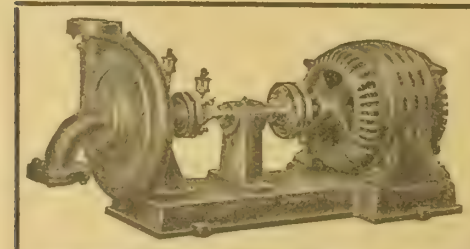

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Your land by means of Electric driven centrifugal pumps.

They are absolutely noiseless and have neither rods, valves nor gears to get out of order.

Write for latest bulletin

Byron Jackson Iron Works Inc.

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Patented Automatic Water Balance Irrigation Pump, direct connected to electrical motor, self-operating.

WORKS: Carlton Station, West Berkeley, Cal.

Irrigation and Forestry

FORESTRY IN OUR COUNTRY SCHOOLS.

Educators at the present time are beginning to make a more practical application of the subjects taught in our schools and colleges. So in considering the question of how much forestry is it practical to teach in our country schools, we must first answer the question of, how much use do the pupils in our country schools make of trees? The extent to which trees are used varies of course with local conditions, but we can find a number of general uses quite common to our country communities.

The boy does not have to be very old before he wants a bow and arrow, and right then we may begin to teach him the best kind of wood for bows and arrows, how to cut the limbs from the trees with the least amount of damage, and some of the most prominent characteristics of trees. His acquaintance with the birch may begin still younger. Mine did, and I can tell that tree anywhere today, because of the close acquaintance I had with it in my youth. Nut and acorn trees, the boy knows in a general way because of the fruit which they bear, but by building upon his knowledge of and interest in the trees because of their fruits he may be taught their other characteristics, their commercial value and habits of growth. The sugar maple is distinguished because of the quality of its sap and here again is a basis upon which I built a knowledge of all the maples.

Much of the damage done to nut and other trees by the boy is done through ignorance and carelessness. If he were taught more about trees, their seeding and growing habits, the injury caused by making wounds in the bark; if he could set out and raise some trees that he would feel were his own, the trees would become such close friends of his that he would come to be their natural protector.

Again, a few visits with proper instruction to where a house is being built, a fence being put up, a wagon in the course of construction, also a trip to the neighboring sawmill would give him very valuable lessons in the uses of wood.

The problem at once arises as to who will teach the boys these various things since the average country school teacher is not prepared for this work. There are several ways out of the difficulty. The teacher may become informed by study with the aid of the State and National Forestry Bureau. Excellent bulletins, dealing with the teaching of forestry in country schools may be obtained from the Department of Forestry at Washington, D. C. The teacher may receive some practical help from carpenters, carriage manufacturers and mill foremen. Undoubtedly the demand for such subjects will force the normal school to offer instruction along this line in the near future. The normal school is the place where teachers should be prepared for this work. Meanwhile we have our summer schools where teachers may receive excellent training in the teaching of forestry.

This article is not intended as a finished discussion of the teaching of forestry in our country schools, but only as a suggestion of a way in which the country boy may get a little more out of his school experience by becoming better acquaited with his surroundings. Thus will be found life in the country more valuable and more attractive.—O. E. Huse, Pennsylvania College.

CALIFORNIA'S IRRIGATION STATISTICS.

Director Durand issued today the first official statement from the Bureau of Census, Department of Commerce and Labor, relative to the statistics on irrigation in California. It is based on a preliminary comparative summary submitted by Dr. Le Grand Powers, chief statistician for the division of agriculture in the Bureau of the Census, under whose supervision it was prepared by R. P. Teele, special agent in charge of irrigation. It should be noted that the figures are subject to revision, after more complete tabulation, but it is not expected that there will be any material modification of the totals or percentages reported.

Acreage, Equipment and Cost.

The total number of farms irrigated in 1909 was 39,352, against 25,675 in 1899, an increase of 13,677, or 53.3 per cent. Between 1899 and 1909 the number of all farms in the state increased 21.6 per cent. The per cent irrigated of the whole number of farms in 1909 was 44.6. In 1899 the per cent was 35.4, showing an increase in per cent of 9.2 during the 10 years.

The total acreage irrigated in 1909 was 2,664,104 acres, against 1,446,114 acres in 1899, an increase of 1,217,990 acres, or 84.2 per cent. The total acreage which all enterprises were capable of irrigating in 1910 was 3,619,378 acres, an excess of 955,274 acres over the area irrigated in 1909. The area included in projects either completed or under construction in 1910 was 5,490,360 acres, an excess of 2,826,256 acres. This indicates in a general way the area which will be available within the next few years for the extension of irrigation, and shows that the area irrigated in 1909 can be more than doubled without the construction of additional works.

The number of independent enterprises reported in 1910 was 13,970. The total length of all ditches was 21,129 miles, of which 12,599 miles were in main canals and 8530 miles in laterals. The length of main canals reported in 1899 was 5106 miles, showing an increase in the ten years of 7493 miles, or 146.7 per cent. The number of reservoirs reported was 1604 having a combined capacity of 743,269 acre-feet. The number of wells pumped for irrigation was 10,710, and the number of all pumping plants was 9267. The engine capacity of pumping plants was 123,590 horsepower. The acreage irrigated with pumped water was 309,134 acres. Flowing wells supplied water to 55,818 acres.

The total cost of irrigation systems reported in 1910 was $72,445,669, against $19,181,610 in 1899, an increase of $53,264,059, or 277.7 per cent. The average cost per acre was $20.02 in 1910, against $13.26 in 1899, an increase of $6.76, or 51 per cent. The average cost of operation and maintenance per acre in 1909 was $1.54.

The acreage irrigated in 1909 has been classified according to the state and federal laws under which the works were built or are operated, as follows: United States Reclamation Service (act of Congress July 17, 1902), 400 acres, or less than 1 per cent of the total; United States Indian Service (various acts of Congress), 3490 acres, or 0.1 per cent of the total; irrigation districts, 173,793 acres, or 6.5 per cent; co-operative enterprises, 779,020 acres, or 29.2 per cent; commercial enterprises, 746,265 acres, or 28 per cent; and individual and partnership enterprises, 961,136 acres, or 36.1 per cent. United States Reclamation Service works are to be turned over to the water users for operation and maintenance as soon as they are paid for. Including these, 71.8 per cent of the acreage irrigated in 1909 was supplied by works controlled by the water users.

Streams supplied 2,265,032 acres, or 85 per cent of the total acreage irrigated in 1909; lakes supplied 18,470 acres, or 0.7 per cent; wells supplied 332,413 acres, or 12.5 per cent; springs supplied 31,779 acres, or 1.2 per cent; and reservoirs supplied 16,410 acres, or 0.6 per cent.

Bees and Their Care

RIPENING HONEY.

One of the most essential things that bid for success is room sufficient to keep every bee working to the limit, and everlastingly at it. Valuable time is often lost, even when there is little sealed honey in the hive; colonies with scarcely a cell sealed become as completely blocked from a field-worker's standpoint as though every cell had been sealed. I learned this bitter experience during 1909, when my hives became filled to the limit; but there was little sealing done, because the bees would not seal until the honey was properly ripened, and the ripening was slow in the extreme. Where there were extra combs to supply room, the yield per colony was far greater, showing conclusively that plenty of empty combs are a most valuable asset to an extracting apiary.

This honey was from the orange, principally, which yields the thinnest nectar, and, besides, was gathered when weather conditions were not favorable to the rapid evaporation in the hive. With the sage it is different, the nectar being much more easily reduced, and the weather conditions more favorable. We can often extract this when no more than half sealed, yet have a splendid honey in all respects.

Successful management depends on having every colony treated as regards its own condition. When a colony is ready to extract, the work should be attended to immediately, without waiting for the entire apiary to get ready, or even enough for a day's extracting, for valuable time will be lost by some colonies before others are ready.

One year, when the season was half over a friend of mine who had had but little experience, allowed his hives to remain full and sealed because he had read that honey should be left on the hives until well ripened. Think of it! hives full, sealed, and waiting, and a honey flow on that would yield to any good colony not less than 5 pounds daily! There are some who go to the other extreme, and wait for little sealing under any condition, removing mere nectar at times when buyers sometimes refuse to handle for lack of body and danger of souring in the can. Others seek to do things on a big scale. They have several yards which they run on the let-alone plan until harvest time, when they rush into the yard with a power extractor, and begin on one side and strip it clean. If the owners of such yards are late, and the hives have been full for seven or eight days, from 5 to 8 pounds of honey lost per day for lack of room, they are none the wiser, but go on with a feeling of satisfaction that they are "boring with a big auger." Details are lost sight of; swarms are let go, and conditions are not watched closely. The day is coming when these men will finish up with a gimlet!—Chadwick in Gleanings.

FALL TREATMENT FOR AMERICAN FOUL BROOD.

The usual method of shaking as treatment for foul brood, during the honey flow, is not advisable in the fall after the flow has slackened. A diseased colony, deprived of combs and honey, and with nothing but starters to build upon, will not get enough honey stored to winter. If diseased colonies are weak in numbers it will probably be cheaper to destroy the bees and render the honey and wax. Where the colonies are strong and the disease has not depleted the numbers they may be shaken upon solid combs of honey after brood rearing has ceased. This treatment will require combs of honey entirely filled so that no cells will be left in which the bees may store any of the infected honey which they carry from the old hive in their honey sacs.

Even if the disease has not gained a foothold in the apiary, there may be as many queenless colonies as diseased ones. A queenless colony in the fall cannot winter, so that a very feasible plan is to shake the queenless colony and the diseased colony into a clean, new hive with starters on the stand of the diseased colony. The queen of the foul colony is caged with the bees in this new hive to prevent the swarm from absconding, and to prevent the bees from the queenless colony stinging the queen. After three days the combs of honey from the queenless colony may be put into the hive and the frames of starters removed. The queen may now be released and the bees will be ready to form their winter nest. This transferring may be done during September or October. The diseased combs of honey may be rendered and disinfected by boiling at least thirty minutes in a closed vessel.—Wesley Foster, Colorado State Bee Inspector.

CONVENTION OF NORTHERN CALIFORNIA BEEKEEPERS.

The Northern California Beekeepers Association will hold its sixth annual convention at Pythian Castle, 831 I Street, Sacramento, on Wednesday and Thursday, Dec. 27 and 28, 1911.

The convention will be called to order at 10:30 a. m. by L. D. Walker, who will deliver the address of welcome. This session will be a short business meeting, devoted to preliminary work. Many speakers will be present, all of whom are expected to take an active part.

Afternoon Session.

Reading of the minutes of last meeting and treasurer's report. "Shall I Produce Comb or Extracted Honey?" "Inspection Work." "Effect of Unripe Honey on the Market." "What Race of Bees Shall I Select?" "Foul Brood in Northern California."

Thursday.

10:30.—"The Value of Organization." Arranging and framing a bill for state inspector. To arrange methods for communicating with all associations of the state, exchanging ideas, amending bill to suit the great majority of beekeepers of the state, standing loyal to all.

Afternoon Session.

"Election of Officers." "Purchasing of Supplies." "Good Queens." "Building Up Bees for the Honey Flow." "The Protection of the Home Market and the Handling of Our Own Product."—B. B. Hogaboom, Secretary.

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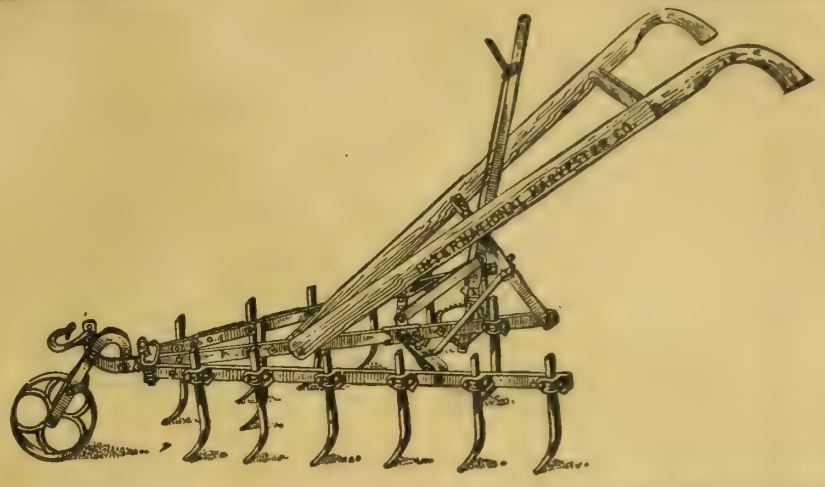

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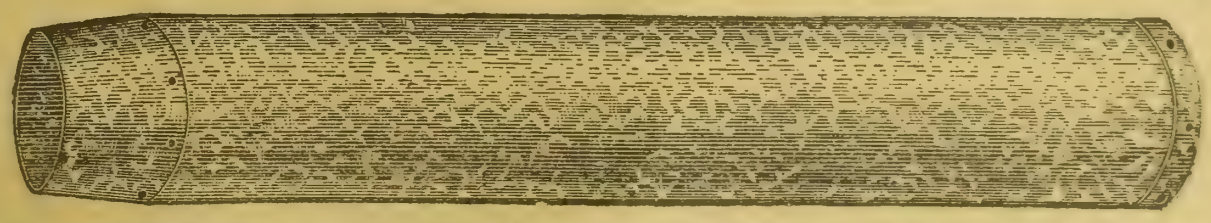

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SAME TO YOU."

The Cultivator hopes for each reader the merriest kind of a Christmas and a happy closing of the old year.

THE BIGGEST IN THE WORLD

California is now ready to claim another "Biggest in the world" in a thousand-acre almond grove to be planted at Banning, Riverside County. Only 200 acres will be planted this year, and as trees can be secured the remainder of the thousand acres will be planted.

QUARANTINE

Europe is receiving absolutely none of American produced plants. This is caused by the fear of American grown insects or fungus pests. Why should not American horticulturists demand as much wisdom on the part of our government?

REPORT OF CONVENTION.

The state horticultural commission is now mailing the proceedings of the Thirty-ninth Fruit Growers Convention which was held at San Bernardino last March. All addresses and discussions are given in full. As the convention was entirely devoted to citrus matters this report affords a valuable handbook to the citrus grower.

STATE CONVENTION.

This is the week of the State Fruit Growers Convention held under the auspices of the state horticultural commission. Dr. A. J. Cook presides, making his first appearance before the fruit growers of the state as commissioner. The people of Santa Rosa are sending out invitations and urging every member to be present. They promise a loyal time and a typical Santa Rosa welcome to all who come.

THE WORLD OVER.

The Cultivator starts a new feature this week in agricultural news notes the world over. They may be found on Page 661 and like the four columns on the opposite page, afford opportunity for one minute's reading at a time. For a spare moment when a longer article cannot be read we like to have Cultivator readers supplied with opportunity for improving that moment.

WALNUTS.

The walnut growers are still holding to the price fixed early in the season, which was fourteen cents for number ones. The buyers have continued in their endeavor to bear the market and practically no sales are being made. It is rumored that some of the associations are weakening and manifesting a willingness to slightly shade, but so far we have not been able to verify the rumors, and members assert positively, "We are standing pat and will not budge from our prices."

AYRSHIRE MEETING.

The thirty-seventh annual meeting of the Ayrshire Breeders Association will be held in New York January 11, 1912, for the purpose of hearing reports of secretary and treasurer, and for the election of officers for the year ensuing. A meeting of the executive committee will also be held.

It is proposed to make an addition to the advanced registry rules so as to allow a cow as many annual registrations as her annual tests qualify her for, and to give her an aggregate record for all consecutive years' records, as a long term record.

The secretary of the assosciation is C. M. Winslow, Brandon, Vt.

COTTON.

Texas remains the banner cotton producing state of the Union; its output this year was 2,157,832,000 pounds. Georgia comes in second with 1,223,168,000; then come Alabama and South Carolina, and other southern states, with California down next to the "and others" with only 5,258,000 pounds. In increase over last year California stands at the head of the list, for while the output in 1910 was 5,986 bales, this year's nearly doubled that; in other words, reached about 11,000 bales. Watch California's cotton.

PLANT DISEASES.

Bulletin No. 218 is being sent out by the Agricultural Experiment Station at Berkeley. It touches upon California plant diseases and is written by Ralph E. and Elizabeth H. Smith. It first discusses functions of the various parts of the plant, showing wherein they may be affected by diseases, and gives the ideal conditions for the production of a crop, both as to air and soil, then goes directly to the common effects of injurious atmosphere and soil conditions in California, then to plant diseases with directions for treatment. This chapter, of course, occupies the principal part of the book. It is made most forceful by the liberal use of half tone engravings and drawings. The book has nearly 150 pages and should be in every fruit growers library.

LAND SHOW.

Los Angeles people are planning for an extensive land show to be held next month. It is timed so as to catch the tourists in greatest numbers, and if as great a success as the first one held a year ago, will be of value to the state. We may say, however, that there was some complaint on the part of exhibitors who felt that the attendance was not so great as it should have been. The displays were magnificent and possibly well worth the fifty cents admission fee asked, but many thought that for a purely advertising feature the admission was too high and this prevented satisfactory attendance and greatest benefit to the exhibitors. When an exhibitor pays $500 or $1000 for floor space in such an exhibit he feels that every inducement should be offered to people to come to see his display.

FERTILIZE THE WALNUT.

The Santa Ana Valley Walnut Growers Association is taking up the matter of increasing fertility of soil in the walnut groves. Its secretary, Mr. A. C. Tiede, is sending out request to every grower who has had experience with commercial fertilizer on walnuts to write as to results of applications. Some of the questions he asks are: "What kind of fertilizer do you use? What are the results of its use? What time of the year do you apply and how much per acre?" As we heard a prominent orange grower remark at one time, "I cannot afford not to fertilize heavily." He sometimes applies as much as 75 pounds of high grade fertilizer to each orange tree. How much the walnut can be forced remains for Santa Ana and other walnut growing sections to determine. The walnut is too valuable a product not to work it to the limit.

HAY.

California hay seems to be in a class all by itself. Alfalfa is close behind and even straw will soon be a luxury. The old joke on breakfast foods that they are simply parcels of baled hay will have to be recalled now, for one Los Angeles horse feeder has said that he is unable any longer to buy hay for his horses and is feeding them on shredded wheat biscuit. Joking aside, the drouth is causing all range stock to be brought in and fed on hay which was being stored for next spring's market, and if it continues much longer a very serious condition will obtain in all sections of the state. The rains persist in holding off far later than usual, but there is no occasion for discouragement, for in past years similar conditions have obtained, yet the season ended most successfully. Unfortunately the hay producers generally are not reaping the full benefit, for the speculators have stored the greater proportion of the stock in the warehouses.

RURAL EDUCATION.

At country life meetings and where the matter of rural education has been discussed, we have heard the expression, "Give to city people the education and other opportunities which will be agreeable to them, but give us in our rural schools what will inform the youngsters as to the life they are living." But we think the city may well enlarge greatly on its curriculum and give just a bit of information at least as to life in the country. Not long since a graduate of the Polytechnic High School in Los Angeles inquired, "Say, Dad; How is the stock from which Pasteurized milk is secured pastured any different from ordinary stock?" This young man was not even second cousin to the young lady graduate who, visiting in the country, inquired of the farmer as to a breed of poultry, and when informed that it was the White Leghorn, expressed chagrin in not observing for herself that the "larger hens" had horns on their legs.

ENCOURAGE SOCIAL LIFE.

In "Principles of Rural Economics," Mr. Carver remarks that "Of all the leading occupations in a civilized country there is none in which success depends so little upon social and so much upon physical energy and adaptability as farming, and there is none where life is lived and work is done in such intimate and direct contact with nature and so little in contact with other men." For that reason the farmer should break away from his natural inclination and develop his social side as much as possible. There is to the thinking man, especially if he is a bit imaginative, great satisfaction in contemplating nature in her different moods, but with all that pleasure the farmer should use every opportunity for developing the social graces. "Those who get their living out of others must of necessity be skilful in the arts of pleasing." With the farmer this is not the case and this has given occasion for the charge that rural people lack in urbanity. Such a charge is far less true today than it was a few years ago since so many factors have entered into lessening the distance between rural and urban people, not in miles and hours only, but in thought and action. This, we believe, will continue, until the farmer's lack of social polish will not be an occasion for remark on the part of his city cousin.

Agricultural News Notes of the Pacific Coast

Northern California

Marysville, Yuba County, is shipping heavily of hogs to San Francisco.

Sonoma County produced over eleven million gallons of wine the past season.

A fine display of apples was made at the citrus and olive exhibit at Oroville.

The Corning Poultry Show held last week was declared to be a complete success.

Lassen County is now pasturing numbers of cattle shipped in from Oregon, Idaho and Utah.

The Balfour-Guthrie ranch near Biggs is now harvesting a yield of about 1,800 sacks of rice.

A big irrigation system is under way which promises much for rich lands near Oroville, Butte County.

Almost 20,000 head of sheep are pasturing in the tules of Sutter County, and have been dipped for scab.

Santa Rosa Grange has elected S. H. Stone delegate to the State Grange, which will meet in Los Angeles.

The next trip of the demonstration train will be through the Southern Sacramento and Northern San Joaquin Valleys.

The management of the Cloverdale Citrus Fair is beginning preparations for the next fair, which will be held in February.

Tree lovers at Oroville are appealing for the preservation of some large oaks which happen to be in the way of sidewalk improvements.

The Penn Valley Creamery located at Grass Valley claims to be one of the best in the state and has closed a most successful season.

The Sutter Almond Growers Association at Yuba City shipped last week over thirty tons and the last of the season's output of almonds.

An olive grower near Chico, Butte County, has experimented with the spraying with water from pressure pipes as a frost prevention.

A triple installation of the officers of the Granges of Santa Rosa, Sebastopol and Bennett Valley will be held on January 13th at Santa Rosa.

Many turkey raisers of the Sacramento Valley report an epidemic which has taken off more than 30 per cent of the flocks. No remedy has yet been discovered.

The Eldorado County fruit growers have re-elected G. W. Ball, President, and A. L. Daniels, Secretary, of the organization which has succeeded so admirably in the standardization of fruit.

Complaint has been made against Horticultural Commissioner Earl Mills of Butte County on the ground that he has shown discrimination in rejecting infested fruit shipped in from Sacramento.

Glenn Ellen Grange in Sonoma County has elected the following officers: Andrew Erikson, master; Edward B. Payne, overseer; Mrs. Kate D. Hill, lecturer; W. C. H. Bruning, steward; Edward Stiger, assistant steward; Mrs. A. O. Gaige, chaplain; Charles J. Poppe, treasurer; Thomas Johnson, secretary; C. H. Lafferty, gatekeeper; Anna Erikson, Flora; Ida Stiger, Pomona; Mrs. C. H. Lafferty, Ceres; Mrs. J. D. Cobb, lady assistant steward; Edward B. Payne, trustee.

Central California

Lindsay has twelve orange packing houses running full capacity.

Watsonville forwarded over 3,500 cars of apples during the season.

Hollister shipped its first car of apples direct to Europe last week.

The spraying for peach blight has been general over Tulare County.

Madera will soon have a plant for the manufacture of irrigation pipe.

A stock grower at Turlock is introducing a mulefoot hog from Argentine.

California will produce this year nearly one million gallons of pickled olives.

Lindsay, Tulare County, produced about a hundred tons of olives this season.

Madera County reports extensive planting of deciduous trees for this season.

Lindsay, Tulare County, expects to pickle about a hundred tons of olives this season.

The president of the recently organized Farmers Association at Patterson is Walter Brown.

The close of the Emperor grape market was far better than indicated earlier in the season.

Tulare County is shipping more lemons this year than any preceding, and the market has treated them kindly.

As soon as the rains soak up the ground thoroughly Santa Clara County proposes to make a thorough squirrel campaign.

Stockmen of the San Joaquin Valley are fearful that the raisins will not come in time to give sufficient feed for the stock.

Tulare County dairymen are making the first effort at grading of cream. The effort is being watched by many dairymen of the valley.

Land owners near Madera are discussing ways and means to secure aid from state and federal governments to get water for that county.

Sanger, Fresno County, claims to be in the orange belt, and in proof reports over fifty cars of oranges shipped out within two weeks.

The roar which was raised in California because of false statements in a circular issued by an Arizona orange buyer has brought from the buyer a retraction and explanation.

Federal squirrel inspectors working in Madera County are urging a more strenuous campaign. They report that one farmer put out poison on a 200 acre tract, and so thoroughly did he do his work that not a single squirrel lived.

At the last meeting of the San Jose Grange Worthy Master E. T. Petit of the State Grange reported as to the last National Grange meeting, held at Columbus, Ohio. He said the last twelve months has shown the greatest increase in membership for over twenty years.

The Tulare County orange producers are in arms because of a circular issued by a merchant handling Arizona oranges. He claimed in the circular that the Tulare County fruit was unripe and could not be sold in any town which had a health department. season some Emperors are reported to have sold near the $2,000 per car mark.

Southern California

Glendora is shipping heavily of good ripe oranges.

Oxnard will market over $50,000 worth of English walnuts.

Orange County is shipping bell peppers and tomatoes to Seattle.

The last rain, while very light, has enabled plowing in several sections.

The Imperial Valley is now discussing the growing of ribbon sugar cane.

Santa Barbara's output of walnuts was 20 per cent heavier than last year.

The Santa Ana Register appeals for a model farm in every county of the state.

The Redlands Fruit Growers Protective League has re-elected former officers.

Thirty cars of Texas cattle, feeders, are being shipped to one ranch in Ventura County.

San Dimas, Los Angeles County, will produce about 500 cars of Navels and 150 Valencias.

The Southern California Arboricultural Association will meet at Redlands Jan. 12th.

Sugar beet growers in the neighborhood of Anaheim are signing contracts for the coming year and ordering beet seed.

While in New York auction last week Mr. C. C. Chapman of Fullerton saw a box of his Valencias sell at $17.25.

Saticoy, Ventura County, shipped fifty-five cars of beans and twenty-five cars of walnuts during the month of November.

Santa Barbara County reports the olive output as up to the average as to quantity and the fruit rather later than usual.

The branch of the State Experiment Station at Meloland, Imperial County, is reported to be doing some exceptionally fine work.

County Veterinarian Rowland of Los Angeles is urging the abolishing of public drinking troughs until the glanders is brought under better control.

An Indian on the Pala Reservation has beaten most of his pale faced neighbors and produced during last season an average of 40 bushels of corn per acre.

Bees are being shipped into San Bernardino County from Ventura County, also from Utah. Ventura County bee pasture has been greatly reduced by the recent forest fires.

The cotton exchange of Imperial Valley has received a proposition to erect mills and gin the cotton of the organization at $2.50 per bale. This is one-half the present rate and will save the growers over $25,000.

Sales Manager Little of the Arlington Heights Fruit Company of Riverside reports California navels in greatest demand in all of the Canadian Northwest country, which section he has recently visited.

The Covina Citrus Association in a annual meeting elected officers for the coming year as follows: President, C. S. Beardsley; vice president, J. R. Elliot, treasurer First National Bank; secretary and general manager, G. N. Atwood; other directors, A. M. Seeley, W. P. Watts, George E. Anderson, J. H. Brubaker, S. T. Berry, A. P. Kerckhoff, T. F. Griswold.

The Coast

Twin Falls, Idaho, is working for a sugar factory.

Freewater, Ore., ships about 20,000 tons of alfalfa yearly.

Spokane had 1,400 birds on exhibit at her poultry show last week.

Roseburg, Ore., shipped 11,000 turkeys for the Thanksgiving trade.

On Dec. 8th Spokane reported not a single case of fresh eggs in the market.

It is claimed that hens at Sheridan, Ore., are producing at the rate of $4.00 per head.

Over 7,000 sheep were ferried across the Columbia River at White Bluff, Washington, last week.

It is declared that this year's National Apple Show at Spokane has set a new standard for apple raisers.

Foresters of the Department of Agriculture are about to cruise the forests of the island of Mindanao.

The third annual meeting of the Northwest Livestock Association was held last week at Lewiston, Idaho.

The Oregon Poultry Association Show recently held at Portland was declared to be by long odds the finest ever.

Spokane and surrounding country are organizing to secure more just freight rates on wheat and other products.

At a meeting of farmers connected with the Weston project it was resolved to abandon the irrigation scheme.

Work on Logan Canyon Dam in Utah has been suspended because of protest of farmers whose land is to be submerged.

Taxpayers near Coeur d'Alene, Idaho, are protesting against the method of taxing realty and are organizing to secure justice.

Hop growers of Wasco County, Oregon, have gained national reputation as growing some of the finest hops in the United States.

The Eastern Klamath section of Oregon hopes to install an irrigation scheme which will cover about 30,000 acres of rich land.

Farmers at Columbia Valley, Wash., will round up coyotes and hope to kill the pests over 25,000 acres of sheep pasture land.

Yuma is having trouble with cattle rustlers, it being alleged that one bunch of forty-five head was recently run off by four Mexicans.

The premium list for the angora goat show to be held at Dallas, Oregon, Jan. 3-5 is now being issued. Only registered goats are eligible.

The Experiment Station at Pullman, Washington, is issuing instructions to nurserymen as to methods of fumigation of stock for insect pests.

Sensational charges that reclamation work has been ineffective in some Montana districts was made before the National Irrigation Congress.

At the election held in Arizona last week ratification of the statehood measure was practically unanimous and the first officers were elected.

Dr. Norton, veterinarian of Arizona, has been inspecting stock near Yuma. The horses in the camps of contractors are all said to be free from contagious diseases.

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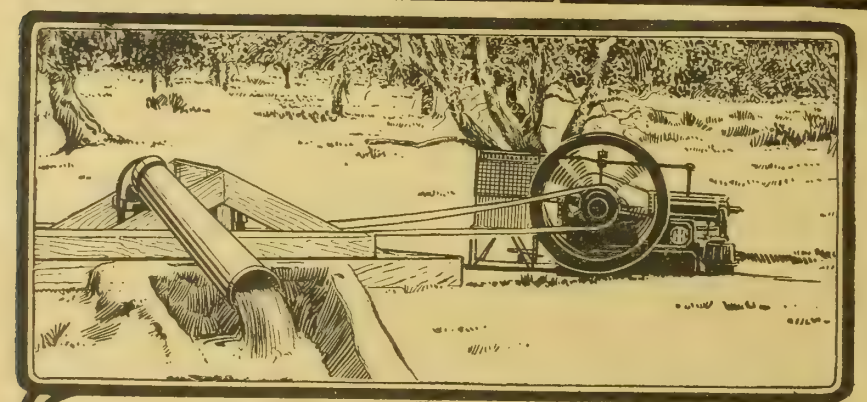

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CORN.

By Mrs. M. E. Sherman.

Corn in California usually means Egyptian, kaffir, milo maize, and not Indian corn. We have the idea that Indian corn has no interest for us as a crop. The alfalfa field has crowded the corn field until we are not growing as much Indian corn as we did a few years ago. The labor troubles have something to do with this, as when we once put a field into alfalfa it is done with for some years. The corn must be sown each season; it must be cultivated several times and then when harvested the process has to be repeated the next season. The lack of silos has also had something to do with this dropping off of corn growing. The cows are not educated to exist on corn stalks, and usually will not eat them at all, only daintily picking the tender leaves and leaving the rest.

Statistics.

The Bible says, "Consider the flowers of the field." The corn plant is one of these flowers that our government considers worth spending much time on in gathering the statistics of yields in the different states. It seems only "dry as dust" people read these over or the question would not be asked again and again, will corn grow in California? Yes! It will and does. Have you any idea how much or how valuable a crop it is? The average of the corn crop from the years 1902 to 1906 in this state was 1,795,668 bushels with an average acre yield of 29.72 bushels. This yield brings California well up in the corn belt sisterhood. The highest yield per acre is shown by Connecticut with thirty-six bushels. Now some of the corn states do not do as well as California. Missouri with a crop of over two hundred million bushels produces an acre yield of 27.98. Kansas with yield of 183 million bushels has an acre crop of 22.08. Texas with 123 millions of bushels gives the farmer returns of 19.03 bushels to each acre. Then why should we not grow corn to balance the protein of the alfalfa?

Reasons.

The principal one is the varying yield from the mixed seed. The need is for corn that will produce good ears and good green fodder. I have seen some of the best of corn growing in the Kings River bottom lands, yet this seed is very imperfect, many ears having no grain at the time. We need to develop some corn for our conditions. It is a great need and a little work will make corn as good a crop in the way of profits as any we can grow. I hope the time will come when the corn field will be as important to us as the alfalfa field is today. I love the alfalfa fields with their soft lavender blooms and cool moist breath on a warm day. I also love the stately corn field with its soldierly rows of corn, bearing ears as arms. The very breath of the corn field is heat and it gives off a breath that is mellow and warm to the passerby.

History.

The corn plant is properly called maize or botanically Zea. The first introduction into Europe came when Columbus carried the seed to Spain from Hayti. It was at first called mahiz and then this was afterwards softened into maize. So long has corn been used as food for the human family that all its early history has disappeared and we only know it as a cultivated plant. In Mexico the teosenthe was long thought to be the parent plant, but now it is regarded as merely a closely allied plant that readily crosses with maize or zea. The botanist finds maize an exceeding variable plant, yet it is classed as a monotype order of plants, with zea as its only variety. Among the agricultural forms of zea or Indian corn are Zea Tunicata or pod corn, that is not of much value in present form except in warm countries were it is used for fodder plant.

Familiar Forms.

Zea everta, is the formal title of a dear old friend, "pop corn." Little but mighty are the power of its grains for Christmas happiness for the children. Fresh popped corn is as beautiful as fresh snow, full of deilcate flavor and a fragrance that makes one hungry to even think of it. My memory of a city child fast fills with thoughts of the long ago. The scent of the holly and crushed greenery from the distant woods mingles with the fragrance of hot pop corn. The noises and crowds of happy people shopping for Christmas all are coming back and I can see the street growing dim before the gas lamps are lit to shed a faint light on the crushed snow. I wonder! I wonder if pop corn will ever again smell and taste as ambrosial as it did in the days when we thought no one in the world was any older than ourselves.

Flints and Dents.

The two varieties of corn most cultivated are the flint and dent. The flint corn, Zea undurata, grows farther north than most of the varieties. It was recognized by Cartier in 1538 as a distinct form. It has the starchy matter laid around the germ in such a way that it dries without any pitting. Dent corn, or Zea Indentura, carries its starchy matter at the tip of the kernels and when it dries it makes a dent. Dent corn was found first as a cultivated plant, having been developed by the Powhatan Indians. It is a corn that grows farther south than the flint forms and does not do as well as far north as they are successfully grown. Dent corn does better in this region than flint corn and is the one generally grown. It is the variety we should take up in pedigree work.

Other Corns.

Another corn that differs greatly from the two last by having no reserved food stored in the kernel is the soft corn, Zea Amylacea, this is of great antiquity and seed precisely the same as it looks today are unearthed from the earthen jars that contain the mummified remains of the early inhabitants of Chili and Peru. Then another old friend, that is not always as good in California as it should be, is the Zea Saccharata or sweet corn of the vegetable garden. This is a smaller growing plant and the kernels of seed are semi-transparent when dried. The Susquehanna Indians were the first to develop this form of corn and the early settlers were suppiled by General Sullivan with the seed when he returned from the expedition to subdue the Six Nations in 1779.

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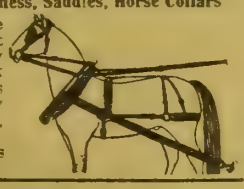

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Giant Grass.

After all what is corn? Merely a giant grass and an annual plant that must be sown every year. Did you ever think of the self sacrifice in times of famine that made these primitive people guard this seed? When they migrated they carried it with them. We owe so much to the heroes of the past, the heroes of everyday life! The corn plant is a big grass belonging to the order Grammae. Its growth is like other grasses from the heart outwardly, the blades unfolding from the rising stalks at each node. The corn plant is typical of human beings, as it grows from the center like the character of man unfolding from the experiences of life. It grows through a childhood of tenderness up into the bloom of adolescence, carrying high its tassel-crowned head. Then comes the finished life work, the golden ears of corn, the leaves like human life, fades away into silence and dust. "As for man, his days are as grass: as a flower of the field so he flourisheth. For the wind passeth over it and it is gone."—M. E. Sherman.

DEHORNING GOATS.

By B. A. R. Stocker.

In the Cultivator of October 26 I notice a query about dehorning goats. A she-goat has a far more sensitive nervous system than a cow, and the dehorning is likely to give her a terrible shock, the effects of which will last a long time. An old goat may never recover her confidence in mankind.

I have had the horns taken off some young goats by men who were expert at dehorning cows, and each said that it was quite a different proposition and much worse. Peroxide of hydrogen dropped on the stump is good to stop bleeding or other trouble. Two of these goats had been cauterized in infancy, but it was not a success, and the horn grew crooked, turning back into the forehead, when, of course, it had to be cut off.

I hope your correspondent will report later if he dehorns his goats. Perhaps a "diamond dehorner" would make a better job.

We are all novices as yet. By all means let us dehorn all kids at birth. My best success so far has been achieved with caustic potash in one operation at seven hours old. The point is to wet the hornbuds rather than the caustic. A kid develops so much quicker than a calf that it is best to take it a few hours from birth. The bud is then soft, small and easily destroyed. Also the kid keeps very still, and when it tries to scratch the place it can't reach it. It will yap more or less for perhaps an hour, but after the next good sleep it is all forgotten. It may be necessary to repeat the operation next day.

One fancier uses a four-inch reading lens and the noonday sun. But if the day is not bright I would go ahead with the caustic.

FEEDING MOLASSES.

The feeding of beet pulp, sugar beet tops, sugar beet syrup, and alfalfa, has become an important industry in the Yellowstone Valley, and the largest single stock feeding outfit in the state is at the local sugar factory, handled by Charles O'Donnell, David Fratt and Frank O'Donnell. They are fattening 4000 cattle and 20,000 sheep. The feed lots cover nearly 160 acres.

Immense quantities of alfalfa and straw feed are used in connection with the beet pulp. Alfalfa is also ground and mixed with the beet syrup

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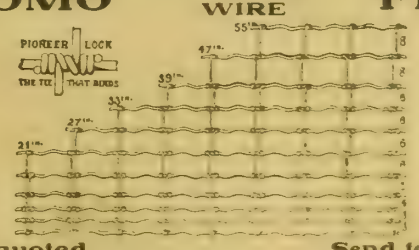

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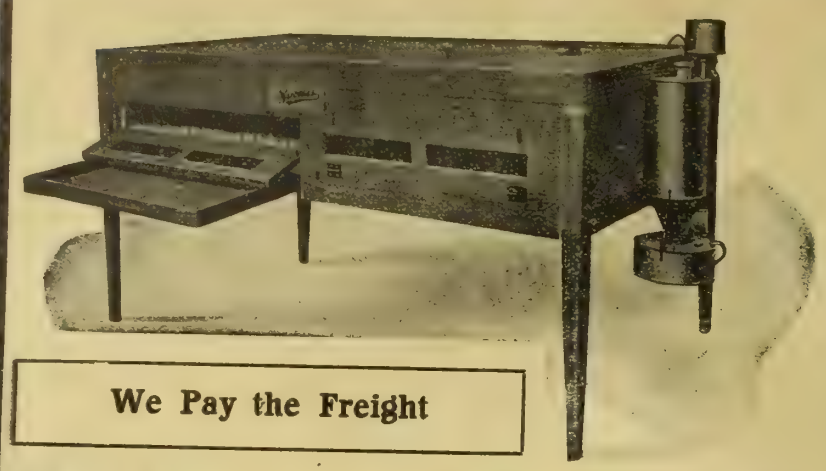

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to make a balanced ration for both sheep and cattle. All of this stock is being brought to a high finish and finds a ready market, mostly on the West or Pacific Coast.

The shipment of cattle and sheep from Eastern Montana to western markets has assumed large proportions.

One of the features of the feed lots this winter is a short horn steer from off the range which weighs 2150 pounds, and which they expect to bring up to 2500 by spring.

In addition to the cattle and sheep at the sugar factory, there are about 5000 cattle and 50,000 sheep on alfalfa in the valley, while many more are expected in before winter comes. Among the larger feeders are Hesper farm with 8000 sheep; Rea Bros., with 9000 sheep; J. B. Long with 6000 sheep; and O. B. Parham, Ed Cardwell, Joe Mason, C. L. Wilcox, John Miller, Tom Moore, Frank Sanderson and others feeding sheep, while Arthur O'Donnell, Tom Ronan, M. C. Cramer, Joe Zimmerman, Wm. Birely, Frank Johnson, Jim Miller, Frank Summers, and Jim Fraser are feeding cattle.—A. Gerharz.

BACTERIAL CONTAMINATION OF MILK.

The bacteria, seeded so numerously in our market milk, come from widely different sources. It is practically certain that milk as it is secreted by the healthy udder is sterile. However, it is difficult to draw sterile milk from the cow. In the case of a cow suffering from disease, such as tuberculosis or inflammation of the udder, the germs can pass directly from the cow into the milk. Bacteria, adhering to the mouth of the milk ducts, can make their way up into the teat for a short distance. Here they find rich food in the few drops of milk that remain, and the warmth of the teat causes their rapid increase.

One of the chief sources of contamination is from the cow herself. The coat of the cow, even kept under good conditions, offers the best of facilities for harboring dust and dirt. All of this filth is laden with bacteria in immense numbers. In the switching of the tail, the movement of the flanks, the rubbing of the skin by the milker, there is a constant shower of bacteria into the pail.

What is true of the cow is also true of the person of the milker. Clothed in the dust-laden garments of daily use, he carries innumerable bacteria, many of which are dislodged and fall into the milk. It is not so much the number from this source as it is their liability of being disease producers that is important.

The air is another source of contamination. The movements of men and animals in the stables cause a good deal of dust to rise and settle in the exposed milk. The presence of dust is always accompanied by large numbers of bacteria, especially of the putrefactive and spore-producing kind.

Probably the most prolific source of milk contamination, as far as numbers are concerned, is the milk utensils. As the milk passes from one utensil to another it gathers more and more bacteria. Pails and other utensils are usually washed with hot water and soap. But after ordinary washing there will be left clinging to such utensils many bacteria which are ready to develop as soon as fresh milk is added to furnish proper food and conditions. Undoubtedly most of these bacteria are lactic acid producers and, although harmless, will cause an early souring of the milk.

These various contaminating factors can be largely lessened or completely eliminated. The most of the bacteria from the fore milk can be thrown out by rejecting the first few streams. Dust in the air can be reduced by exercising care as to the time of feeding and bedding. The number of germs from the animal and the milker can be reduced by cleaning and moistening the udder and the flanks of the animal, by using a pail with a small opening, and by requiring the milker to wash his hands and use clean clothes. The use of steam or scalding water in washing the dairy utensils will entirely exclude the germs from this source.—G. A. Gilbert, Colorado Agricultural College.

AMERICAN DAIRY INSTITUTE.

One of the most important educational conventions held in connection with the National Dairy Show, Chicago, was the American Dairy Institute. This meeting was important in that a number of matters regarding the growing of alfalfa, and its relation to the fertility of the soil, was brought out by Dr. Cyril G. Hopkins, professor of agronomy, University of Illinois, who is one of the best known authorities in the country.

The matter which is not of common knowledge was brought out in the statement made by Dr. Hopkins, that it is a mistaken idea that alfalfa enriches the soil. Large yields require a great amount of fertility and will impoverish the soil very rapidly unless fed to live stock and returned to the soil. The idea that alfalfa enriches the soil probably comes from the fact that in many instances the soils have been growing large crops for many years and the crops following alfalfa do better than those following non-leguminous crops. This is due to the fact that alfalfa extends its roots many feet into the ground, utilizing the fertility not reached by the roots of other plants, and putting the soil in good physical condition.

NUBIAN GOATS.

By B. A. R. Stocker.

Referring to the interesting article of Nov. 2nd concerning the Nubian and Anglo Nubian goats, the particulars given in my short letter on this subject on Sept. 28th were taken from Bulletin 68, pp. 66-69, and Holmes Pegler's Goat Keeping for Amateurs. As to what this infusion will do in California we shall not begin to know for several years. The goat that "dropped eleven kids in one year" was a Nubian. But the next writer regards this as "the exception rather than the rule." Let us hope so! These stories are French; not "California stories" yet.

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Profit in the Poultry Yard

Practical poultry people who may have ideas from their experience as to methods of feeding and housing and general care of poultry will confer a favor upon the Cultivator and its circle of readers by sending in concise accounts. Mrs. Basley is always willing to answer queries, which with the experience of others should make this a most valuable feature in poultry life on the Coast. Opinions or matters of a personal nature should be omitted, but a concise statement of facts is always valuable.

QUALITIES OF THE RHODE ISLAND RED.

By A. G. Goodacre.

So much is written now-a-days about the qualities of a breed, that most of it reads like a copy off the other fellow's slate. The purpose of this article is not to deal with the fancy side of the business but to review the many good qualities of a strictly commercial breed. We have bred the Rhode Island Red for a good many years, taking up the Rose Comb Reds first while living in Canada, twelve or fourteen years ago. We had the old, original blood, that is to say, in those days they bred all three combs, rose, single and pea, from one mating; also there was quite a tendency to throw games and Leghorn types.

There are generally striking features to most breeds of fowls to distinguish them, some leading characteristic. Fortunately, with the Reds these have been moulded upon sensible, economic lines. Take for instance their moderately fine bone and great length of keel. This latter is an essential. The short Wyandotte backs are discarded. The Rhode Island Red is a long fowl, carries its tail comparatively low, gives a well-fleshed carcass of fine appearance and first-class quality, not indulging in the coarseness of fiber of some of the other American breeds.

I think it can rightly be said they have always held their own in the eastern markets, having been largely "manufactured" to cater to the New England taste, having their origin in Rhode Island and Massachusetts. I have seen large quantities in the markets around New York and a great many are shipped in from around Philadelphia just the size and catchy class to them that make quick sellers in the market, and so we all know, that which sells quickly is satisfactory to the producer and retailer alike. Another reason why they sell well is their medium size, and we found on carefully analyzing them that the relative amount of edible parts to offal when cooked, cooled, separated and weighed, is large compared with many fowls. They don't have big, coarse heads and necks, nor large abdomen; the bone is comparatively fine.

How about eggs? Why, the Reds are on top again. Yes, they shell them out summer and winter. Again we go back to their ancestry and find one of their chief requisites, the production of eggs in all kinds of weather, on a very bleak coast. This breed lays a brown or tinted egg, deemed a desirable quality in the New England markets. Some strains lay darker eggs and some larger eggs than others. The hatchability of these eggs is splendid, often in excess of Leghorns. That is one reason why we have tied up so strongly to the breed. Their origin from outcrosses, the game blood used and their activity, are probably responsible for this important feature in this breed. But how many eggs do they lay a year, you ask? Well, Mr. Hogan walked into our yards one day and estimated several at 220 or better. We really think individuals can be found in most flocks averaging 200 eggs per year, but a safe estimate would be from 160 to 180 eggs per hen in a carefully bred flock. We have no records.

We consider the Reds first-class layers for two seasons. My experience with White Wyandottes of over the two-hundred-egg mark was anything but encouraging, as the progeny bred from these high-capacity trap-nested hens totally lacked vitality. Friends, it is so easy to run out a breed that it may be well to sound a note of warning just here.

I have noted in this variety quite a tendency to produce small early laying pullets and where this is encouraged by hatching from pullets eggs, soon the flock deteriorates and the eggs are of smaller size. To offset this some people put into their flocks extra large males, but the correct way is to select a pen of yearling and two-year-old hens of undoubted good laying qualities, weighing when in good condition about seven pounds and mate them to a vigorous yearling cock well around the standard weight for an adult bird of 8½ pounds; the weight for cockerels is 7½ pounds, for hens 6½, and for pullets an even 5 pounds, and we don't believe in breeding them over these weights; that is encroaching on the Plymouth Rock and Orpington classes. Wise heads have placed these weights to fit the breed.

The Red is an economic feeder and this is very important too; they are not nearly so apt to lay on superfluous fat as the other American varieties. They are an ideal fowl for confinement on the city lot, and as setters and mothers have no superior, not being too heavy and lazy so as to crush the eggs and chicks. We break up our brooders in a separate pen in five days. We mate twelve to fifteen hens to a male, but I might here say that the best lot of eggs we ever incubated was from a flock of some 110 hens mated to eight males in a run some 50 feet by 200 feet long. The fertility stood steady right through the season at 94 per cent. The Rhode Island Red is in every sense the rancher's fowl; it is a great success on the small city lot; it is at home and a producer in the hot spots on our map.

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FALL CHICKENS.

By Mrs. J. R. King.

As the wise old poultry keeper said: Any time you can raise a chick is the best time for hatching!

However, I like to see our biddies bringing in the fall hatches, for, on our ranch no chickens are raised with so little trouble or expense as the fall chickens. Late hatched chickens are in full laying the next summer when the price of eggs begins to ascend. If they be well fed, their moulting period at one year will be short and light, interfering but little with their laying.

Our chickens range freely in orchard, vineyard and alfalfa. The fall chicks therefore have a full harvest of seeds and bugs ready for their reaping. Up to the time the cockerels are ready for the Thanksgiving or Christmas market, their feed costs us almost nothing. By the time the price of feed begins to go up in the spring, the pullets are beginning to lay enough to pay their own way.

Of course, fertility runs very low in the late summer and autumn, and I have never had what I considered paying hatches in incubator lots. Right here is where nature and the broody hen can double discount all our science and knowledge of artificial incubation.

The biddy that steals her nest out under a grapevine, or in the weeds, comes in usually with a full hatch. She knows the reason for the faith within her when she slips away and hides her nest far from the cackling crowd. Her eggs are fertile! But the eggs I pick up from random hens that haven't a ghost of a notion to set, those eggs turn out a bad lot!

So in mid-summer and later, when I see a hen that since early spring has been faithfully contributing to my egg basket, when I see her sneaking away under the undergrowth on our ranch, I thankfully let her sneak. She's earned her rest and right to maternity. It pays not to inquire too persistently into her private affairs. The chicks she will bring in are worth much more than her eggs, maybe already a trifle stale, or addled.

Then when those little chirping, fluffy balls of chicks come in the first time led by their solicitous mother, how she will fight you off and ward them with her widely spreading, trailing wings! If you ever expect to lay hands on them, now is the accepted time. Let them go but a few days and you might as well try to catch a covey of wild quails.

It is no small task to capture a Leghorn hen and her brood just in from the jungle. It takes the whole family and many strategies. We pick up the helpless little ones and put them in an open box, a trifle too deep for them to jump out. Here we leave them, until the mother, distracted between anxiety for her imprisoned babies and natural fear of a trap, finally conquers her fears, and she flutters into the trap and hovers her young. I slide another box over the first, and those chicks are mine to put into a coop, to be fed properly and protected for a week or more till the hen becomes attached to her new quarters.

As soon as caught, I dust the hen with dry sulphur. Also, I put a touch of grease on the head, under the wings, and under the chin of each little chick as a warning to mites and lice. If I fear an outbreak of chicken pox, it is easy to spray hen, chicks, coop and all, on some warm morning with a sheep dip solution. It need hardly be said that at all times the coop must be kept clean.

CALIFORNIA POULTRY SHOWS.

Santa Ana, Dec. 27-30. Orange County Poultry, Pigeon and Pet Stock Association. S. J. Jackman, President.

Napa.—Jan. 4-6, 1912. Napa County Poultry Association. Wallace-Rutherford, secretary.

Los Angeles.—January 4-10, 1912. Joseph E. Davis, Secretary, R. D. 1, Box 48, Los Angeles.

San Diego. — January 12-18, 1912. The Fanciers Club of San Diego. V. Davis, Secretary.

This is one busy woman's method of keeping up her flock. On our ranch, where chicken raising is only one of many activities, I am glad enough to get these gratuitous fall chicks. For several years I have raised in this fashion a hundred or more fine pullets each autumn.

COLD STORAGE.

One of the most important factors in the marketing of poultry products in recent years is cold storage, says H. W. J. in the National Stockman and Farmer. It is doubtful if any one thing has done as much for the prosperity of the poultrymen. It makes a market for his product at flush times when otherwise prices would drop to ruinous levels, and, contrary to the rule in general storage, this held-over product scarcely has any influence on the market price of fresh eggs in winter. I have just read an article by a defender of cold storage who claims that while storage does raise the level of prices at times of flush production "so that it is possible for the farmer to realize an adequate return on his labor and equipment, it keeps prices down during periods of natural scarcity." The time may come when the production of winter eggs, for example, may so nearly approach supplying the needs of the market that storage stocks will have that effect, and we shall not then be so friendly to storage, perhaps. At present, however, the supply of strictly fresh eggs is so far from satisfying the demand of the market that the competition of storage eggs is scarcely felt by the winter egg producer. Market quotations each winter setting a new mark in high prices for fresh eggs is proof enough on that point.

There is no question about the fact that storage does greatly affect the price of spring and summer eggs. These begin to go into storage before the price reaches 20 cents, and when it reaches 18 cents a dozen the storage operators stand ready to take everything that is offered. It is practically impossible for eggs to go below 15 cents under present conditions. And cold storage did it. But storage does not keep egg prices down in winter, for the simple reason that there is a great gulf fixed between strictly fresh eggs and the very best that the storage man can do for his stock, and we have not seen and are not likely soon to see the time when there will be enough fresh eggs in winter to supply the demand. Storage does give to the general egg-consuming public fairly good eggs (speaking now in broad, general terms) at a price which it can afford to pay and at a time when otherwise it would not be able to have eggs at all, and that's a good deal. Instead, however, of keeping prices up in the summer and reducing them in the winter the actual effect is to raise the average price for the year decidedly above what it otherwise would be. Hence it is hard to see how the poultryman can allow himself to join in the hue and cry against cold storage which is agitating a part of the public at this time.

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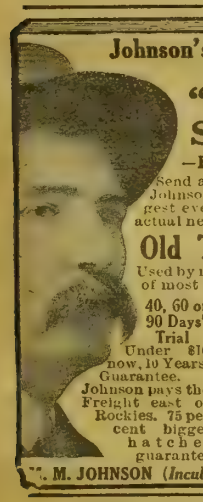

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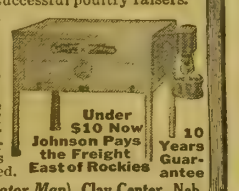

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DIRTY EGGS ON THE FARM.

While there are a few egg producers who take the best of care of their product, the average farmer considers the eggs produced on the farm a by-product and makes very little provision for their care, aside from gathering them. A large loss is caused by dirty eggs, the number being enormous, and according to the estimate of Secretary Wilson of the Department of Agriculture this money loss to the farmers in the United States amounting to about $5,000,000 annually.

This loss is very largely brought about by not gathering the eggs often enough. In wet weather more dirty eggs are found than at any other time. This is caused by the fact that the hen's feet are often covered with mud or other filth, and in going on the nest to lay she soils the eggs already in the nest.

An insufficient number of nests is often the cause of many of the dirty eggs found. Eggs are laid on the ground and around the hay and straw stacks, and becoming stained, are classed as "dirties." Again, when too many eggs are allowed to remain in a nest some are broken and many of the others become smeared with broken yolks. This condition is often brought about by allowing the broody hens to use the same nests with the layers. On a farm where one nest to every four hens is provided and the nests are kept clean and well bedded, it is found that very few dirty eggs are produced.

After gathering the eggs, care should be taken not to put them where they will become heated, or near oil, onions, or other vegetables, as they readily absorb odors.

Although dirty eggs may be perfectly fresh, they invariably sell as "seconds," and when but a few dirty eggs are mixed with an otherwise fresh, clean lot, they materially decrease the price of the clean eggs.

SCRATCHING SHED.

Sometimes one can save a lot of poultry loss and worry by seeing after very small matters connected with the poultry. For instance, chickens take cold more easily from damp and rain than they do from extremely cold weather. Chickens hate wind, and a wind of good velocity will send them under shelter, but not so rain. Into this they will venture, and after a day's rain they go on the roost wet and draggled, and, after a few such wettings, come off the roost sniffling, and with a quirk in their throats. Then let roup germs come along and that flock is fixed for loss in more ways than by death, as a roup-infected flock is a poor flock to breed from. Every poultry house should be so made as to allow the flock to be shut in on very stormy days. I know that its' a nuisance sometimes to be forced to do this. You know that at the lowest market price every moderate sized hen is at least worth a 50-cent piece. This is why I advocate a scratching shed, though it be but 8x12 feet, adjoined to the farmer's chicken house. You can shut the chickens in this, give them something to scratch for and save them from the chilly rains of spring and fall.

Always fatten all kinds of poultry before selling. The fat bird not only weighs more, but brings a better price because it is fat. From a week to ten days before marketing confine the birds in coops or pens and feed them all the grain and soft feeds they will consume. Supply grit and water for digestion.

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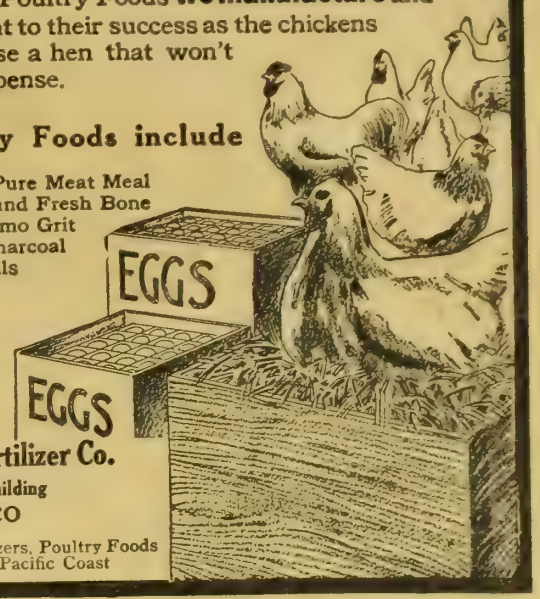

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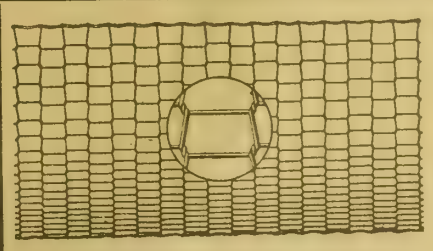

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For Sale—Registered Jersey cows, heifers and heifer calves and two bull calves. The young things are sired by Brown Lassie's Advocate 80,045. He is grandson of Diploma's Brown Lassie and a descendant of Brown Bessie, Merry Maiden, Ida Marigold and others of noted merit. The heifers should duplicate the work of their ancestors, being out of high testing dams.
Also a few choice Berkshires of both sexes. Write for prices and breeding; or, better come and see them. Geo. C. Dickson, National City, Cal.

We have now five choice young registered Holstein bulls for sale. Handsome fellows. Stock of our breeding won at the fairs all over the state. Juliana De Kol was champion at Sacramento. Most of these bulls are either sired by her brother or are out of her sisters. M. E. Sherman, Minnewawa Stock Farm, Fresno, Cal.

Grapewild Farm Herd of thoroughbred Berkshires. State fair prize winners. Boars and sows of all ages, unrelated. Address A. B. Humphrey, Mayhews, Sacramento, Co., Cal.

For Sale—Ten head Shorthorn bulls and Berkshire hogs from best strains in America. I won silver cup for best herd at California State Fair, 1911. H. L. Murphy, Perkins, Cal.

For Sale—Pure bred New Zealand and Belgian rabbits for breeding purposes. A-1 stock, prices right. W. G. Mattjetscheck, Banning, Cal.

For Sale—New Zealand and Belgian Hare breeding stock; extra fine, healthy. Los Angeles Rabbitry, Box 251, Inglewood, Cal.

Fine thoroughbred Berkshire boars and sows, subject to registry, for sale by Geo. C. Roeding, P. O. Box 1310, Fresno, Cal.

Belgian Hares—Fine, healthy breeding stock for sale cheap. Write for your wants and prices. J. A. Reinhart, Hollister, Cal.

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Local Representative Wanted—Splendid income assured right man to act as our representative after learning our business thoroughly by mail. Former experience unnecessary. All we require is honesty, ability, ambition and willingness to learn a lucrative business. No soliciting or traveling. This is an exceptional opportunity for a man in your section to get into a big paying business without capital and become independent for life. Write at once for full particulars. Address E. R. Marden, Pres. The National Co-Operative Real Estate Company, L 448, Marden Building, Washington, D. C

Wanted—Position as working foreman or under-foreman on ranch, by married man. Perfect health. Salary no object. R. C. Batchelder, 2245 9th Ave., Los Angeles. Phone 71250.

Wanted to Rent—Experienced farmer wants to rent a ranch equipped with stock and tools. Good references. Address Geo. J. Hutter, Bloomington, Cal.

Wanted—25 or 50 stands of bees or small apiary in good condition. W. Helfrich, Palmdale, Cal.

TREES

EUCALYPTUS TREES.
For Fall and Spring planting.
Best varieties, in any quantity desired, at lowest prices.
Special discount to nurserymen.
EMIL FIRTH,
346 South Broadway, Los Angeles.

Grafted Walnuts on Cal. Black Root—Franquette, Mayette, Concord, Placentia Perfection, San Jose Mayette, fine stock, true to name. Also Bartlett Pear, Imperial Prune, Apricot, and a complete line of other stock. Santa Clara Valley Nurseries, Gilroy, Cal.

For Sale—A complete nursery stock, ideal location, Huntington Drive, midway between Los Angeles and Pasadena. Will sell outright or ½ interest to experienced nurseryman. This is a bargain and will pay you to investigate. Take El Molino car, see L. Baird, Bairdstown office.

Washington Navels and Valencias, 1 to 2 ft. high, 35 cents each. Two feet high and upwards, 50 cents each. Clean, thrifty stock; guaranteed free from pest or disease. Carroll B. Smith, Box 9, Redlands, Cal.

12,000 Eureka Lemon,
20,000 Washington Navel.
FRANK MORRIS,
Box 24, Covina, Cal.

For Sale—Four thousand Valencia and navel orange and Eureka lemon, one-year buds; also a large number of two-year-old trees. L. M. Netzley, Azusa. Phone 2170.

Fine Line of Navels, Valencias and Eureka Lemons for delivery spring of 1911. Contract now and get the first choice. The King Citrus Nurseries, Whittier, Cal.

Orange, Lemon and Grapefruit Trees, all first class stock. Special prices to parties planting groves. Edward A. Carvel, 1454 Oak St., Glendale, Cal.

For First Class Valencia and Navel Orange Trees and Eureka Lemons, see A. G. Snow, Oxnard, Cal.

Eureka Lemon Trees, June buds, five-eighths and up, cheap. Geo. R. Stoner, Orange, Cal.

RARE PLANTS

Wild Plant Improvement Gardens, Santa Ana, California. Newton B. Pierce, proprietor. Rare choice ornamentals and new fruits from all lands.

For Sale—Fine large spineless cactus plants, now ready for planting. Price 50c each. Cooper & Vierra, Yuma, Ariz.

GEESE

White Embden Geese—Always healthy, easily raised, best for feathers and flesh, $3 each. Both phones. Leslie F. Gay, East Los Angeles.

FARM LANDS FOR SALE.

A Rare Chance—
Ancient lake bottom, 50 feet above Sacramento river bottom, black loam, no alkali; perfect drainage, primeval oak forest, land first class for pears, prunes, peaches, berries, onions, potatoes and hops. Schoolhouse, postoffice and express office being established on the ranch. Three miles to high school. Six local trains daily. Northern Electric road survey from Woodland to Colusa and Red Bluff runs through center of ranch.
Also ridge land of red gravelly loam. Bearing orange and lemon trees on adjoining land. Oranges ripe and well colored for Thanksgiving trade. Large percentage of fruit runs fancy. Abundant water for both classes of land. Electricity one cent per kilowatt hour. Irrigation equipment goes with the land. 10 acres and up on exceptionally low terms. S. P. R.R. Co. named their station on this ranch "Richfield." It is well named.
Orchards of none-resident owners planted and cared for by J. W. Mills, former superintendent of the Riverside Citrus Experiment Station. Address J. W. Mills, Box 431, Corning, Cal.

WILL YOU BUY A HOME
In one of the best colony districts of the State? We have sold many 20-acre tracts in the last three weeks to people who have inspected the land, and they pronounce the land first class and the conditions ideal.
There is plenty of water, creamery, cannery, churches, schools and packing houses.
Close to 4 Railroad Stations.
We want the right people and will make terms to suit, and, if desired, will accept part of crop each year after first cash payment until land is entirely paid for.
ORCHARD AND FARM LANDS COMPANY, 309-310 Stimson Bldg., Los Angeles.

For Sale—LINDSAY ORANGE LANDS.
Eleven days before Christmas the fourteen packing houses of Lindsay sent out pay checks for the 1910 navel orange crop. Lindsay orange district had the holiday orange market all to themselves, and of course they sold at good profit.
Why not invest in some of this Lindsay orange land and get the benefit of rapidly advancing prices?
Ten-acre tracts in Lindsay, $150 per acre, on easy terms.
Choice Tulare alfalfa lands, water in abundance; any size tracts, $50 per acre up.
KIOUS-WHANN REALTY CO.,
235 Mason Bldg., Los Angeles. A4164.

170 Acres—¼ mile from R.R. station and school, $30 per acre. 100 acres in crop; more can be planted to trees or vines. Partly warm citrus soil or for winter gardening; some alfalfa land; well 50 feet deep, 10 feet across, water 8 feet from surface; all under fence; no other improvements. Terms $3000 cash, balance at 7 per cent; will not trade. Address C. T. Haney, Escondido, Cal.

Choice Orange Land, Exeter District—63 acres, 3 miles south of the town of Exeter, California, three-quarters of a mile from Southern Pacific railroad station, right in the foothills, leveled, water developed on it. Write for particulars. The Phalanx Company, 513 Chamber of Commerce, Los Angeles, Cal.

For Sale—
THE ORANGE GROVE MAN.
Large list of orange groves in best districts. Seven years' experience in growing oranges.
A. W. RICHARDS,
THE ORANGE GROVE MAN,
Claremont and Pomona, Cal.

For Sale—Near Lancaster, Cal. Bargains in improved and unimproved land. Also relinquishments for sale or trade. Some homestead land. A. S. Burnham, Box 451, Lancaster, Cal.

Apple Orchards—Large and small, in the only apple producing section in California. The greatest section west of Missouri River. Write for booklet. Geo. W. Sill & Co., Watsonville, Cal

San Diego County! My splendid weekly newspaper will tell you about this great county and superior climate. 16 weeks for 15c. H. P. Rising, publisher, Escondido, Cal

For Sale—A-No.-1 alfalfa lands, situated in the San Joaquin Valley. Cheap water. For particulars see C. Menefee, 413½ S. Hill St., Los Angeles.

For Sale—Choice apple and pear land, also relinquishments. John Carroll, Real Estate, Victorville, Cal.

ORNAMENTAL PLANTS

For Sale—Ornamental plants, palms, roses, ferns, etc. Send for our new catalogue. Orange Co. Ornamental Nursery, Fullerton, Cal.

Plants of all kinds, wholesale and retail, at Las Palmas Greenhouses, Palo Alto, Cal. Contracts solicited. Let us know your needs at once

Conifers balled, flowering acacias, potted eucalyptus, Rex begonias, small ferns. Wholesale, retail. Ballou's Nursery, Pasadena, Cal.

DUCKS

We have a few genuine "Rankin" strain Mammoth Pekin drakes to spare that will add a pound each to your next lot of ducks. Grand big fellows, fit to show. Price two to five dollars each. Eggs from our best pens, $10 per hundred, $2 setting. Long Beach Poultry Ranch, Long Beach, Cal

For Sale—One fine Aylesbury drake, $3; 6 fine Pekin drakes, $1.50 apiece; 24 fine Pekin ducks, $1.25 apiece; 3 fine Ancona roosters, $1.00 apiece. P. J. Sharp, Hemet, Cal.

Imperial White Pekin Drakes, ten months old, $2 each. Booking orders for eggs, $1.50 per doz., $10 per hundred. H. Hinckley, Lincoln, Cal.

Five varieties of Ducks, four breeds of rabbits. Catalog free. Caldwell Bros., Los Angeles, Cal. Phone Glendale 421 R.

Indian Runner duck eggs from heavy laying, white egg stock, $1.50 per dozen. Mrs. Fred Chester, Santa Rosa, Route 2.

POULTRY SPECIALITIES.

For Sale—Incubators, brooders and poultry supplies, new and second-hand incubators bought, sold and rented. Also the new California. Write and ask about it. California Poultry Supply House, 852 Los Angeles St., Los Angeles, Cal

MACHINERY

For Sale—Second-hand windmills, tanks, pumps, engines, farm machinery.
OUR SPECIALTY—NO WORRY.
MATERIAL GUARANTEED.
WINDMILL OUTFITS.
12 ft. steel mill, fine steel tower, tank, galvanized pipe, pump complete; 8-ft. aermoter, tower, 2000-gal. tank, 22-ft. aerstand, 2-inch galvanized pipe, pump complete; also smaller outfits, $39 and up.
ENGINES.
Another 1½-H.P. Fairbanks, $55; 2-H.P. Fairbanks, brand new, $59; 3-H.P. R. & V. engine, $69; 4-H.P. Stearns, $79; 6-H.P. Holly, $39; 18-H.P. Western, $450; 32-H.P. Fairbanks, $550; 40-H.P. Western, $600.
PUMPS.
No. 3 Byron Jackson vertical centrifugal pump, $75; double acting triplex and duplex pumps, cistern, hand and windmill force pumps.
TANK SPECIALS.
15 2000-gal. galvanized tanks, 3 3000-gal. galvanized tanks, 2 15,000-gal. galvanized tanks, and most all sizes in Redwood and Basswood tanks; some brand new and all at about ½ first price. We guarantee our tanks.
FARM MACHINERY.
Walking and riding plows; Fresno, slip and wheel scrapers; spike tooth and disc harrows, mowers, two-horse tree sprayer, weeder, Delaval cream separator, dry washer, fruit crusher.
PIPE SPECIALS.
200 ft. 10-in. line pipe, fine for under ground, $16 takes the lot. 1800 ft. 1¼ galvanized, 5¾c.
WAGONS, BUGGIES, HARNESS.
Outside shipments receive personal attention. Prices very lowest good, serviceable material can be furnished for. Get others' prices, then compare material and prices with us.
DEMMITT CO., 120 N. Main, Los Angeles.

Small Power Sprayer—New Dec. 1st; cost $150; price complete on wheels, $90; have two, will sell one; does excellent work; photo and description free. Myers, 658 South Hudson, Pasadena, Cal.

MISCELLANEOUS

For Sale or Exchange—5-passenger tourist, newly painted, engines and tires first class. Wind shield, 5 lamps, speedometer and register (ask anybody who has one), always running; $375 cash or trade for horses, hay, farm machinery. Must go immediately; owner going east; left with Demmitt Windmill Company, 120 North Main, Los Angeles.

Free—"Investing for Profit" Magazine. Send me your name and I will mail you this magazine absolutely free. Before you invest a dollar anywhere, get this magazine—it is worth $10 a copy to any man who intends to invest $5 or more per month. Tells how $1,000 can grow to $22,000; how to judge different classes of investments; the real power of your money. This magazine for six months free if you write today. H. L. Barber, Publisher, R. 430, 28 Jackson Boulevard, Chicago, Ill.

For Sale—All sizes; second-hand; screw pipe and casing from ½ inch to 13½ inch. We have this pipe in A-1 condition, ready for shipment and can give you any amount you want. Can save you big money on any kind of pipe you want to use. Don't fail to write or come and get our prices before you buy elsewhere. E. A. Clampitt, Los Angeles, Cal., cor. Lake Shore Ave. and Court St. Phones—M4863, Home 53022.

Grower to Consumer—Raisins in 50-lb. boxes. Sultanas, 6½c; Muscatels, 3-cr. at 5c, 2-cr. at 4½c. A. H. Dugdale, Etiwanda, Cal.

For Sale—Store and fixtures with dwelling separate. Lot 75 by 150 feet. Good stand for bakery. Address Wm. Mager, West Saticoy, Ventura Co., Cal.

SEEDS AND PLANTS

Free—20 per cent in fresh package seeds, to introduce our goods, on all orders amounting to $2, and not over $5. Prices, Apples, 12½c; Pears, 30c; Roses, 30c, first grade 4 to 6 ft. trees, No. 1 Roses. We pay the freight. Medford Nursery Co., Medford, Oregon.

Citrus—150,000 sweet and sour seed bed stock, first class in every particular. Also one and two-year Eureka lemon, Washington Navel and Valencia nursery stock. C. W. Wilhite, Glendora, Cal. Home phone 2062.

Berry Plants and other good things for the garden and farm. My new catalogue is just out; send for it now. Louis F. Scribner, Pasadena, Cal.

California Black Walnuts for Seed—From the finest trees in state; large or small lots. Santa Clara Valley Nurseries, Gilroy, Cal.

Strawberry Plants—Jessie and Longworth, for sale, $3.00 per 1000, f. o. b. Ripon. Arthur Roberts, Ripon, San Joaquin County.

Florida sour orange seed and seedlings for sale. Otis E. Hyde, 1314 W. 51st St., Los Angeles.

Agricultural Implements—Vehicles

For Sale—Agricultural implements, vehicles. Splendid values, lowest prices, liberal credit. See us without fail before buying. Catalogs mailed out of town customers. Write us describing what you wish to buy. When in the city a personal call will show the largest stock and assortment in the Southwest. Arnott & Company. Established 1892. 112-118 South Los Angeles Street, Los Angeles.

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Catalogues for the seed and nursery trade, the live stock and poultry industries, are a specialty with us. Two thousand illustrations to select from. Write for prices and samples. The Kruckeberg Press, 237 Franklin St., Los Angeles.

DAIRY SUPPLIES

Have You a Cow?—Have you a creamery? Have you a cheese factory? Write us. Everything used in either a dairy, creamery, cheese factory, or for handling milk, cream, butter or cheese. We are in a position to quote you prices on entire creamery or cheese-making outfits. We make a specialty of only the latest and best sanitary machinery and supplies. Send us a list of what you want, and we will quote prices which we feel certain will interest you. O. J. Weber Co., 225-227 East Sixth St., Los Angeles, Cal.

POULTRY

How to Make Money—Mrs. A. Basley's Latest Poultry Book is without exception the most wonderfully complete manual on the subject of successful poultry management ever written. The secret of how to raise every turkey hatched and the "Basley Formulas," now published for the first time, are worth many times the price of the book The "Western Poultry Book" is a practical book by a practical woman. Price $1. Address Mrs. A. Basley, Garfield Place, Hollywood, Cal.

Baby Chicks from my pure-bred stock, S. C. White Leghorns, carefully selected for laying and standard qualities. $9 per 100, $85 per 1000. As I use eggs for hatching from my own stock exclusively I can furnish healthy and strong chicks that will give best satisfaction. Hatching capacity 25,000 chicks per year. Eggs from the same stock $5 per 100, $45 per 1000. Correspondence solicited. J. R. Heinrich Poultry Yards, Arroyo Grande, Cal., San Luis Obispo County.

Just What You Want—S. C. Black Minorcas. Splendid Layers—Thoroughbred Stock. Eggs and Day-Old Chicks.
CHOICE WHITE HOLLAND TURKEYS.
A few extra fine young toms at reasonable prices. Eggs and young poults for sale after March 1st. Now is the time to order. Write wants. Mrs. W. D. Root, 735 Verdugo Road, Glendale. P. O. address, R. D. 1, Box 105, Los Angeles.

Orland Hatchery. Booking orders now for Spring delivery. White and Brown Leghorn baby chix, from healthy range stock. Our reinforced concrete cellar has a capacity of 20,000 eggs, and is so ventilated to insure strong chix. A post card brings you our prices. Orland Hatchery, Orland, Glenn County, Cal.

See Here! We have some of the best thoroughbreds in this world, beauties, S. C. R. I. Reds, White and Black Minorcas, Crystal White and Black Orpingtons, Barred Rocks, baby chicks, hatching eggs, cockerels. Monte Rio Poultry Yards, Newcastle, Cal.

The Goodacre strains—23 more ribbons and silver medal at Phoenix; seven firsts, Stockton, etc. Breeding stock for sale, a few chicks also. Buff Orpington, R. I. Reds, White Leghorns and Anconas. White Runner ducks. Goodacre Bros., Compton, Cal.

Pay $2 deposit now on each 100 White Rock chicks and save $4; chicks to be delivered any time you say. Genuine Fishel Strain. Guaranteed safe delivery on this deal. Write us today. Pioneer Hatchery, 112 East 8th, Los Angeles.

From Jan. 1st to May—Kellerstrass Crystal White Orpingtons, also two pens direct from Byers, 20c per egg straight. Buff Wyandottes 10c per egg. Order now; results guaranteed. Frank Haasis, Ontario, Cal.

For Sale—Thoroughbred S. C. White Leghorn eggs for hatching. Well known Quality strain. Price $6.00.
"BRED TO PAY."
Quality Egg Ranch, Artesia, Cal. P. E. Santa Ana line to Coyote Sta.

For Sale—Pullets, cockerels and yearling White Orpingtons (Cook strain), Black Minorcas (Northrup strain), White Minorcas, R. I. Reds (Tompkins strain), pure bred. C. U. Chamberlin, Los Gatos, Cal.

True Blue Andalusian cockerels, exhibition stock, from imported strain of the greatest layers on earth. Send for circular and prices. J. R. Huddleston, 342 Edgeware Road, Los Angeles.

Day-Old Chicks, Barred Rock and White Leghorns, good laying strain. Order now to insure early fall delivery. The Fairmount Hatchery, 29 B Rural No. 1, Santa Cruz, Cal.

Poultry Wanted—We pay the highest market price for all the local poultry we can get, no matter how large the quantity; also fresh ranch eggs. We remit immediately. Allaway & Layton Co., 607 E. Third St., Los Angeles, Cal.

"Chicks well hatched are half raised." White and Brown Leghorn chicks from healthy, vigorous breeding stock. San Jose Hatchery, Henry Langenschwadt, San Jose, Cal.

For Quick Sale—A few pens and trios of Buff and White Orpingtons, Cook strain. Mrs. S. Swaysgood, 5th and East End, Route 2, Pomona, Cal.

Just Hatched White Leghorn Chicks every month, from select, heavy laying, mature stock. No pullet eggs used. Lodi Hatchery, E. Elm St., Lodi, Cal.

Will sell at a bargain, 50 White Leghorn pullets, 9 months old and laying; extra fine utility stock. R. Liston, Morganhill, Cal.

White Leghorns—Buff Orpingtons. Bred for beauty and great egg production. Grand lot of both old and young stock for sale. Prices reasonable. Write your wants. Model Poultry Farm, Box H, Irvington, Cal.

Barred Rocks exclusively. Took blue ribbons on Barred Rocks at Fresno Fair. Some fine cockerels for sale. Eggs $5.00, 100. G. L. Hawley, Madera, Cal.

Very fine strain Barred Rock cockerels Now booking orders for baby chicks and eggs; also S. C. R. I. Reds, headed by my $50.00 male to special high-class females. R. B. Sherman, Newcastle, Cal.

Schellville Hatchery. Thoroughbred White Leghorn chicks, hatched from heavy winter layers. The kind that pay. No dead or weak chicks charged for. Order early. Box R 72, Sonoma, Cal.

If you want good White or Brown Leghorn day-old chicks or ten-weeks-old pullets, send your order, large or small, to Hausam & Gelatt, R. 6, San Jose, Cal.

Buff Wyandotte eggs for hatching, from prize-winning stock, after Jan. 1st. W. C. Parker, 113 Pacific Ave., Santa Cruz, Cal.

Barred Plymouth Rocks (Hawkins Royal Blue Strain). Cockerels, day-old chicks and eggs for hatching. Enoch Crews, R. No. 1, Santa Cruz, Cal.

Ring-Necked China Pheasants for sale. Pairs or breeding pen of four; also eggs for hatching during the spring season. Address T. D. Morris, Agua Caliente, Cal.

For Sale—Choice thoroughbred White Rock cockerels. Also eggs. Address A. G. Morley, Kern, Cal., R. E. D. 4.

White Rocks—Fishel Strain; choice young roosters for breeding. Eggs $1.50 per setting of 15. R. F. D. No. 1, Box 220 A, Long Beach, Cal.

For Sale—A few large, strong Black Minorca cockerels. R. G. Page, 1227 W. 10th St., Los Angeles. Phone Broadway 5594.

Kellerstrass Crystal White Orpington Eggs, $2 per 13. R. L. Warren, National City, Cal. R. D. 1.

POULTRY

For Sale—When you consider poultry, study for the variety that pays. White Leghorns have been repeatedly proven by five years' government practical test to be the greatest egg producers. The Howard strain has proven itself the world's best hens by 8 years' constant trap nesting (as done by no other breeder) of world's most famous birds. BUY THE BEST. Come and see the hens that lay 28 eggs in 30 days. Eggs for setting, trap nests for sale. Improve your flock with choice cockerels from my yard. W. W. Howard, Huntington Park, Los Angeles. Phone South 5621.

For Sale—Five pairs of White African guineas, $3 per pair. W. A. Grover, Hemet, Cal.

Rose Comb Black Minorcas, nine years line bred. Stock and eggs in season. Eleanore Minorca Farm, R. D. 1, Los Angeles, Cal.

Barred Plymouth Rocks—The kind that "win and lay." Eggs and stock for sale C. H. Vodden, Los Gatos, Cal.

TURKEYS

MAMMOTH GOLDEN BRONZE TURKEYS. "International Tom," first prize and special prize turkey at the International Poultry Show, and said to be the largest turkey in the world, heads the flock. Young stock with large bone, long body, full breast, well marked and early maturing, for sale. Their mothers are from the leading prize-winning flocks of several Eastern states. I claim to own the best flock of turkeys on the Coast. Write soon, as orders are coming in fast. Prices very reasonable.
GEO. A. SMITH, Corcoran, Cal.

For Sale—Thoroughbred Mammoth Bronze turkey hens of large size and fine markings, and the kind that lay early. Eggs for hatching $3 per doz. Pen is headed by mammoth tom of one of the largest and finest Eastern strains. Young stock for sale after Dec. 1st. Mrs. Nellie Hart, Holtville, Cal.

For Sale—Thoroughbred Mammoth Bronze Turkeys, both hens and toms, all ages. Also a few proven good mothers. Special price to close out entire lot. Address Quality Egg Ranch, Artesia, Cal. P. E. Santa Ana line to Coyote Station.

For Sale — White Holland toms, May hatched, weighing from 15 to 18 lbs. Fine birds for breeding; price $7.50. E. T. Wilcox, Corona, Cal., R. D. 1.

For Sale—Standard bred toms, 15-20 lbs. Strong, vigorous stock; March and April hatch. Price $4.50 and $6.00. Royal B. Thayer, Thermal, Cal.

For Sale—Choice pure bred Mammoth Bronze turkeys, extra large and well marked. Mrs. Frank McVey, Turlock, Cal., R. F. D. No. 3.

For Sale—Mammoth Bronze turkey hens and toms, March, April and May hatch. Price from $3 to $6 each, according to age. Address Cypress Poultry Ranch, Anaheim, Cal.

For Sale—Mammoth Bronze turkeys, hens and toms; Eastern stock. Gobblers $10, hens $5, trio $18. Eggs for sale in season. Address John Carroll, Victorville, Cal.

Veterinary

Answers in this column by Fred G. Matthews, M. S., D. V. M., 1232 Central Ave., Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Stifled.

What is meant by "stifled?" Is there a cure for the trouble?—Subscriber, Claremont.

A condition which obtains occasionally in the hind limb of horses and mules in which the limb is extended backwards and held rigidly in that position, because of the displacement of a small bone in the stifle joint is sometimes termed stifled by veterinarians. Stablemen, horse owners, etc., seem disposed to apply the term to any obscure lameness in the hind limb whether from a nail wound, sprain, strain, spavin, or other cause, and often heroic remedies are suggested as sure cures, such as forcing the animal to swim a deep stream, or to jump a fence. Still another foolish and dangerous remedy suggested is to tie one end of a long rope to the foot of the lame limb, secure the other end to a tree or post and drive the horse at full speed the length of the rope and thus subject the limb to a terrific jerk. Write again, describe the lameness, whether acute or chronic, and we will try to aid you in determining the cause and location.—F. G. M.

Many of our farmers are like the alchemists of old—they are ever searching for the miraculous seed—the means which without any further supply of nourishment to the soil, scarcely rich enough to be sprinkled with indigenous plants, shall produce crops of grain a hundred fold.—Liebig.

The State Farmers Union of Oregon held its last annual at Pendleton.

Agricultural Notes

Swedish sugar factories, whose men work from six to six o'clock, have found advantage in a two hour rest at noon.

Western Alberta farmers have found that section well adapted to sugar beet culture and are producing twelve tons of 17 per cent beets.

Germany is now making a test of a new draft animal in the American mule. They were first tried in the cities and are now being tested on the farms.

Japan has just established a new sugar manufacturers journal at Tokio. It is called Sugar Industrial World. It is printed in Japanese, with a few pages in English.

In Bohemia the beet sugar factories employ 18,000 men. At time of the recent harvest shortage of labor endangered a large proportion of the beets because of coming frost. Factories were closed and the laborers sent into the fields to gather the beets for the farmers.

India's cotton crop for the last season was reported to be under the ordinary, but in some sections up to the average.

Russia's cotton crop was greatly injured by early frosts.

Visitors at the recent Royal Agricultural Society Show at Melbourne, Australia, were pleased with fresh grapes kept in cold storage for several months.

Australia boasts that she will soon be one of the world's greatest fruit suppliers. Climate, soil and the world for the market combine in giving the antipodes certain advantage.

India is making rapid strides in date culture. Over 2,000 date palm suckers were recently imported into the Punjab district.

The value of sugar beet seed exported to the United States from Warsaw, Poland, increased from $9,000 in 1908 to $27,000 in 1910. The seed was chiefly shipped to California.

During 1910 Spain bought from Porto Rico 3,672,264 kilos of coffee. A kilo is 2.2046 pounds.

Owing to heavy late frosts, Chili will have a very short grape crop during the season which is now approaching. The growers who have any grapes are in clover, for they are being contracted for at $4 per hundred pounds.

Chili has been suffering from a severe drought, and livestock will suffer greatly where irrigation is not practiced.

Apple culture in New Brunswick has received great interest through the apple show recently held at St. Johns. The quality of the fruit exhibited is said to have been a revelation to all who attended. The coloring of these apples was wonderful, the favorite varieties being McIntosh Red, Fameuse, Dudley Winter, Wealthy, Wolfe River, Alexander, Golden Russet, King of Tompkins, Ben Davis, Gano, Gravenstein, Grimes Golden, Baldwin and many others.

Efforts are being made to produce a high grade of sugar from the nipa palm in the Philippines. Since history began, these palms have been the source of alcohol and intoxicating drinks for the Filipinos, but the Department of Agriculture believes there are great sugar possibilities in this particular plant. The natives are using this plant to its limit, it seems, already, for from its leaves are made shingles, hats, mats and bags, pails for dipping water, coarse baskets, brooms, thongs for tying rice bundles, fuel, "floating logs," and material for sewing shingles. From its fruit, food or sweetmeats, and, as noted above, from its sap a pure, wholesome drink while it is fresh, a fermented drink called tuba, alcohol and vinegar.

The greatest agricultural product of Manchuria is the soya bean.

An agricultural expert in Washington makes the following distinction between a farmer and a planter: A "farmer is one who first makes his living on the farm—he raises things which his family and stock may eat. In connection with these he raises some sort of "money crop," wheat, oats, corn, cotton or sugar cane. The "planter" raises a money crop, whether cane, cotton, wheat or oats, and out of the proceeds of these he purchases what his family and stock may need. He advocates that every planter be converted or transformed into a farmer.—Louisiana Planter.

At a pure food congress held in New York recently the discussions were peppered with a whole lot of questions as to why there was such a high price on sugar. Light was brought on the question of why there was always an advance in sugar prices during the canning season, but no one seemed to give any definite information on the question propounded.—Louisiana Planter.

The United States imported of sugar beet seed a total of 9,203,437 pounds, worth $604,920, in the fiscal year 1909, and 10,309,075 pounds, worth $668,446, in 1910. It is admitted free of duty. The seed is not grown in the United States. One farmer at Fairfax, Wash., who has been producing it in a limited way, states that he has now discontinued beet seed culture. The sugar beet is a biennial, requiring two seasons to develop the seed. It is understood that not only is the price higher this year for sugar beet seed, on account of the shortage in Europe, but that it will probably be still higher next year, as the small beets grown this season for the crop next year did not develop well. The Department of Agriculture finds that the imported beet seed is showing deterioration in recent years; hence it is highly desirable that the seed should be produced in the United States. The Bureau of Plant Industry is considering some experiments along this line next year in the Shenandoah Valley of Virginia.

PRACTICAL POINTS ON OLIVE CULTURE.

By G. D. Tofanelli.

Mr. G. D. Tofanelli of Fallbrook, San Diego County, has given the Cultivator same practical hints on olive growing in California. He himself has in the last few years brought a neglected olive grove into profitable bearing through applying his knowledge of fundamentals gained in his native land, Italy. He is now installing an olive mill to manufacture his own oil. He writes:

"The best varieties for oil are Rubra, Uvaria and Columbella; for pickles, Mission and Manzanillo.

"Olive trees do not like wet ground or lowlands, but do better on foothills. The ground must be loose and well drained, preferably decomposed granite, but all loose ground is good for them; no adobe, no hard or compact ground, no flooded ground.

"As to culture, the ground should be plowed deeply once a year, or better, twice, and cultivated once or twice a year. To keep in balance and good shape it is necessary to prune alternate years. It is very easy to keep olive trees in good condition with little expense and have good returns."

In the Cultivator of December 7th we quoted article from The Feather on scientific feeding for eggs. By mistake the last paragraph giving credit to The Feather, was left off. That paragraph was as follows:

"I will close this department by arranging the four following foods for November feeding:

Whole corn	114 lbs.
Whole wheat	36 lbs.
Beef scrap	22 lbs.
Mangel wurtzels	62 lbs

Ratio, 1:4.75. —The Feather."

The above should have been inserted in place of the last paragraph which was printed by mistake.

A GOOD PRESENT.

Be sure not to overlook the Cultivator in selecting your presents this year. You will find order blank on another page, which explains itself. On request we will notify the one to whom it is sent that the paper is a present and that it is to stop at expiration. Send in your order at once so as to get the subscription started with the next issue.

In addition we call attention of readers to the clubbing list of the Cultivator. It has not been given as often as we would have liked because of the crowded condition of the advertising columns, but there are but very few papers pubilshed in the country on which we would not be glad to give our subscribers the advantage of a lower clubbing rate. A very few refuse to enter into this proposition excepting for new subscribers, but a postcard to this office will secure information as to exact rates on any publication.

The Whiting Jersey Stock Farm Co.
Is making the very best strains of blood fresh from the Island of Jersey a specialty. Whiting Jersey Stock Farm Co., Heber, Cal.

CLIP YOUR HORSES Clipped horses work better, feel better, look better, and are worth more than unclipped horses. Clip off the thick, heavy coat that holds sweat and dirt. Clipped horses dry quickly, rest well and get more good from their food. They come out refreshed and look and work better.

This Stewart Ball Bearing Clipping Machine

is acknowledged in every civilized country on earth as the finest outfit ever made for horse clipping. It has all file hard cut steel gears, enclosed, protected and swimming in oil. Friction and wear reduced to minimum. Turns easiest, clips fastest, lasts longest. Guaranteed for 25 years. Price, complete, **$8.50** Send Today

Get one now at your dealers or send for our big, new catalogue

CHICAGO FLEXIBLE SHAFT COMPANY, Dept. H CHICAGO

TREES! We make a specialty of growing the genuine Gravenstein apple tree

The variety that is making Sonoma County famous. Also other leading varieties of apples. They are thrifty, matured, hardy and well rooted. Are my own grown, grafted and budded from bearing trees of the best strain, and guaranteed true to name.

Also a good stock of cherries, plums, peaches, and other fruit trees; roses, palms, and other ornamental stock.

Send for price list.

Pleasant View Nursery A. F. Scheidecker, Prop. Sebastopol, California

KIRKMAN NURSERIES

WM. T. KIRKMAN JR.
MANAGER

MAIN OFFICE FRESNO, CAL.

Attention!

PLANTERS
NURSERYMEN

Now ready to deliver—positively the finest and cleanest stock of Deciduous Fruit Trees and Vines we have ever seen grown.

We have already booked orders for more than twenty carload lots to large planters and dealers. This season we have not lost a large buyer to whom we have had the pleasure of exhibiting our trees and vines.

We are digging about half a million trees; about half of these sold to date.

If you need a carload—or a dozen—of the best rooted and cleanest trees that care and right soil and moisture conditions can produce, it will pay you to call on us or send a list of what you will need, for our estimate.

We have to offer a very complete assortment of nearly all varieties of

Peaches Apricots Plums Pears
Apples Cherries Walnuts Figs

and other Fruit Trees; as well as all the standard GRAPE VINES; also several thousand ORANGE and LEMON Trees, and a large lot of EUCALYPTUS.

—ADDRESS—

Kirkman Nurseries

860-890 J Street FRESNO, CAL.

What to Plant?

That's the QUESTION

Make your wants known to us and we do the rest. We suggest as **Money-Makers:**

Fig Trees Either Calimyrna, White Adriatic or Black Mission
Pear Trees Bartlett; "The Get Rich Quick Variety."
Peach Trees Drying Freestones and Canning Clings
Grape Vines Table, Raisin and Wine Varieties

We have them. Send list of wants for quotations.

The Fresno Nursery Co., Inc.

P. O. Box 615, Fresno, California

CITRUS TRIFOLIATA ROOTS

We have a stock of two-year-old Valencia Lates, Washington Navels, Tangerines and Navelencias budded on this stock, and which we will trade for real estate, or a second-hand small runabout automobile. Will be glad to give prices and particulars on request. In writing kindly state what you have to offer, with price, and oblige. All correspondence cheerfully answered.

San Dimas Citrus Nurseries

SAN DIMAS, CALIFORNIA

Complete Pumping Plants

We select, purchase and install, **Guaranteeing Satisfaction** for our clients

H. U. Roeding & Co. Engineers and Contractors Foxcroft Bldg., San Francisco

Questions and Answers

THE EDITOR AND STAFF

Olives—Frost.

A valued subscriber at Earlimart calls attention to our statement in a recent Cultivator that many olives in the San Joaquin Valley have been injured by the cold weather of the last few weeks. While this is true, there are many sections of the valley in which olives are being gathered in best of condition. The Earlimart subscriber says that on December 11th as fine olives as one ever saw were being gathered and made into pickles. It is probable that nearly all sections of the San Joaquin Valley will produce olives satisfactorily nine years out of ten, and in addition there are other favored localities where a crop may be harvested every year.

Aphis.

I send cucumber leaf infested with little green bugs or lice. What are they and what can be done?—Subscriber, National City.

These are simply the ordinary plant lice or green aphis, which are enjoying the perpetual summer of San Diego County's coast section. Spraying the vines with kerosene emulsion, tobacco extract solution, or simply powdering with buhach will dispose of the present crop of the pest. We say the "present crop" because a few days later may see more of them returning, for they are a persistent pest. They weaken the productiveness of the plant by sapping its juices.

Papaya Seed.

Where can I secure seed of the papaya?—Subscriber, Sespe.

This plant does not produce well from the seed, but reproduction is usually through cultivation of the root system. Seedsmen and nurserymen advertising in the Cultivator can generally supply rooted plants of the papaya. We refer inquirer to article on citrus page of this issue, wherein the Department of Agriculture of the Philippines gives instructions as to producing from seed.

Oilve Seed.

Where may I secure olive seed? Would like 100 lbs.; also would like sweet and sour orange seed.—Subscriber, Lindsay.

Olive seed is not a commercial product because the olive is always produced through cuttings. We do not think this seed can be secured except by buying the olives. Sweet and sour orange seed can both be had by placing order with seedsmen advertising in the Cultivator.

Smut on Wheat and Barley.

Please give directions for using formaldehyde in treating wheat and barley for smut. Which is the best, formaldehyde or bluestone? How much bluestone should one use?—Subscriber, Grimes.

Use 1 lb. formaldehyde to 50 gallons of water. Sprinkle wheat, covering afterwards with cloths soaked in the solution, or better, immerse the sack of seed for 30 minutes in the solution.

The bluestone solution is made as follows: 10 lbs. bluestone to each 50 gallons water. Immerse the seed in this for 10 minutes, then drain and dry. The grain drill, also vessels in which seed may be carried, must all be treated with one of these solutions. The spores of the smut are persistent and liable to be in these vessels or vehicles if they have been used in handling grain before. As to which is the best of these, we are not certain, but the formalin is usually preferred.

Value of Manure.

What value per ton would you place on dry pulverized manure from cow corrals? Would you consider it of more value than fresh horse manure with some straw in it? How many tons per acre of dry cow manure would you apply to six-year-old apple trees?—Subscriber, Greenfield.

It is impossible to give the value of manure. Feed of animals, location and other factors vary greatly. For instance, in large cities animal owners usually pay to have manure removed. In the gardening section or far from manure production, a price in excess of its real fertility value is often paid. The richer the food of the animal in plant food constituents naturally brings the richer fertilizer. Animals fed upon grains and alfalfa, for instance, produce valuable manure. Those in pasture and running to the straw stack produce manure of lower value. Another factor is as to whether absorbents are used so as to preserve the liquids. Six-tenths of the fertilizer voided by farm animals is generally considered to be in the liquids. To give something of an idea that each one may figure his own values: In 100 lbs. of sugar beets there is 87 lbs. water, .22 lb. of nitrogen, .10 lb. of phosphoric acid, and .48 lb. of potash. In corn there is 10.9 lbs. of water, 1.82 lb. of nitrogen, .70 lb. of phosphoric acid and .51 lb. of potash. In cotton seed meal there are 6.70 lbs. of nitrogen, 2.47 lbs. phosphoric acid and 1.83 lbs. potash. If wheat straw is used it often contains in each ton 9.6 lbs. of nitrogen, 4.4 lbs. phosphoric acid and 16.4 lbs. potash. The action of dairy scrapings is much slower than that of horse stable manure where much litter is used. Or to express it in other words, horse manure is often spoken of as being "hotter." Dairy corral manure is excellent for a mulch.

Olive Cuttings.

What month is the best to plant olive cuttings in hotbed? Also if artificial heat is used, what temperature should be maintained?—Subscriber, Orland.

We refer our subscriber to article by Mr. J. W. Mills in Citrus and Tropical Fruit department of this issue.

DOMESTIC SUGAR.

Secretary Wilson, in his annual report for 1911, just issued, estimates the beet sugar crop of the Western states at 600,000 short tons, this exceeding any previous crop by fully 80,000 tons. He estimates the yield of domestic cane sugar at 380,000 short tons, or say some 350,000 long tons, which was a conservative estimate, made doubtless when the text of his report was written, say in October, all of which, however, has been upset by the recent freezes, the result of which will be a very large diminution in the final output of domestic sugar in Louisiana and Texas. Secretary Wilson adverts to the fact that the beet and cane sugars of the country amount to nearly a million short tons, the factory value of which, with the beet pulp, is about $135,000,000, or $41,000,000 more than last year.

The Fresno Raisin Exchange is securing many new members.

Filing on Oil Lands

By Edw. L. Payne, Attorney-at-Law

The general rule is that deeded or patented lands cannot be located for oil or other minerals, but that only lands belonging to the public domain can be entered by a mineral claimant. The acts of congress granting indemnity lands to railroad companies have ordinarily, if not invariably, excepted from such lands all that are more valuable for mineral purposes than for agricultural, and the grant to the Southern Pacific railroad contains an exception.

The decisions of the department of interior relating to public lands, so far as they are applicable to the question under consideration, are to the effect that discovery of oil must precede legal location of land for an oil claim; that one who is in possession of government land under a claim that it is more valuable for agriculture than it is for mineral purposes, and who has properly entered the same as a homestead, cannot be ousted or ejected by one who claims the land to be more valuable for mineral purposes, and on the contrary, that one who is in actual possession of government land prosecuting diligently the work of discovery for oil, cannot be ousted or ejected by a later comer who claims the land to be more valuable for agricultural purposes.

These rules have been made applicable to land claimed by railroad companies, to the extent that where it appears that the land was actually mineral in character and known to be such at the time the grant was made to the railroad company, no title passed to the company, and the land is open to entry for mineral purposes.

The department of the interior also seems to have decided that one may take possession of land granted to a railroad company where the mineral has been reserved by such grant, and where the company is only in constructive possession, (that is, such possession as it is deemed to have by reason of its patent, as distinguished from actual occupation) and may locate the same as an oil claim, and if oil is discovered the location may thereby become perfected. I say seems to have decided this point, because the utterances of the department, so far as I have examined them, are not entirely clear upon the point, and it may be that my construction will not be sustained by later decisions.

Where land has been patented to an individual and mineral excepted from the patent (which very seldom occurs) the same rules would be applicable, with the exception that where such patented land is in the actual occupation of the patentee or his successor in interest, no actual discovery of oil having been made on the land, he might, in my opinion, maintain an action of ejectment against any one entering upon the land for the purpose of prospecting for oil, as such a one would have no legal claim under the rule that discovery must precede legal location. So far as I am aware, this exact point has not been decided by the department of interior, and therefore I give it merely as my opinion.

I am also of the opinion that one in actual possession of land patented to him or his grantors, has the right, while in such possession, to use such force as is necessary to prevent an entry upon such land by one seeking to discover oil thereon, where the land is not known to be more valuable for oil than for agriculture, because of the fact that no discovery of oil has actually been made upon it, and also that an innocent purchaser, for value, would be protected by the United States, where no actual discovery of oil had been made upon his land; and if a mineral claimant should gain a foothold and succeed in discovering oil, that the government would in some appropriate way, indemnify such innocent purchaser, providing that location for mineral purposes should be permitted to stand.

With respect to the inquiry as to the effect the Mexican grant would have upon the question, I am of the opinion that if the mineral had been excepted from the Mexican grant, the same rules would apply as though the property had come in the first place by virtue of entry under the United States Land Laws, and not by reason of the fact that it had been allowed to the claimant because previously set off to him by the Mexican grant; in other words, the mere fact of the Mexican grant should make no difference; the question is, were the minerals reserved by the Mexican grant, and if so, can a location be made, although no discovery has actually taken place?

I see no reason why one in actual possession or claiming under a deed, might not file upon the lands so occupied or claimed, if the same is mineral land. Such a person, in order to render the filing valuable, should proceed diligently and continuously to drill for oil for the purpose of making discovery, and while so doing, cannot be interfered with by one seeking to locate the land for the same purpose. Unless the discovery had actually taken place upon the land so filed upon, the filing would not hold without such continuous effort to make discovery. After discovery has been made, then the filing may be held by doing merely the amount of work required for annual development work, or $100 per annum.—E. L. P.

A MODERN CALIFORNIA FACTORY.

The works of the Geo. E. Dow Pumping Engine Co. are located on the Oakland Tidal Canal and have the distinction of manufacturing more different types of pumps than any other firm in the world. This company maintains two display rooms, one at 235 S. Olive St., Los Angeles, and the other at 199 First St., San Francisco, where a large number of pumps are kept on the floor. A visit to these rooms is really an education in pumping machinery.

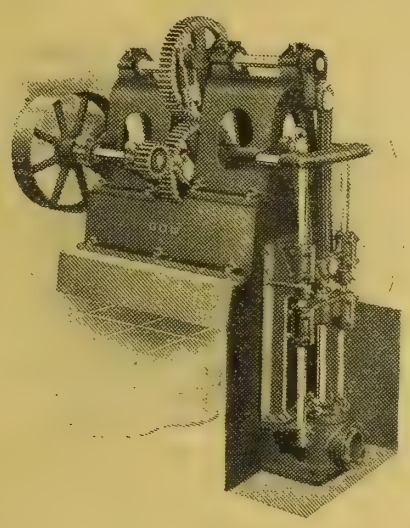
The latest production of this company is a new non-pulsating type of deep well pump, which is illustrated in their advertisement this week. This pump is remarkable for its simplicity and high efficiency, containing no complicated sliding movements or odd shaped gearing. In operating a direct pull is made on the pump rods and a long overlap is secured by a simple combination of cranks and gears. Much influence has been brought to bear on this company from time to time, to induce them to develop a non-pulsating type of deep well pump, but not until the present design was developed, did their engineers feel justified in offering such a pump to the public.

This announcement should prove of interest to all citrus growers and all others who have occasion to use deep well pumps, as the many complicated devices now in use on non-pulsating types of pump, have always proved to be more or less of an annoyance.

The Dow non-pulsating pump has no more complications than the ordinary deep well pump, while its efficiency is much higher than any other type yet developed.

We would earnestly recommend to our readers, when visiting either Los Angeles or San Francisco, that they visit the Geo. E. Dow Pumping Engine Co.'s show rooms and under any conditions to get their printed matter, including Agricultural Pumps, which is a valuable book to any farmer, and their bulletin on centrifugal deep well pump machinery.

Simplicity **Durability**



That is the universal opinion of engineers who inspect the new

DOW DOUBLE ACTING DEEP WELL PUMP

A combination of cranks and plain gearing gives the quick return motion of the pump plunger, and at the same time gives the overlap so essential to avoid pulsation in deep well pumps. All sliding connections are eliminated, and the machinery involved is only three gear wheels and two sets of cranks. Compare this with other deep well pumps.

DOW DEEP WELL PUMPS have the following marked advantages:

No sliding connections.
Few moving parts.
Plunger overlap.
Full adjustable bearings.
Accessibility.
Standard cross heads.
Small pit space required.
All parts of pump head are readily accessible, and in plain view while operating.
Cut gears.
Compact symmetrical design.
Direct pull on all rods.

Then remember that it is built by a firm with nearly half a century experience with pumping machinery.

GEO. E. DOW PUMPING ENGINE COMPANY

413 Sheldon Bldg.
San Francisco, Cal.

Write to Either Office for Bulletin

235 So. Los Angeles St.
Los Angeles, Cal.

Do You Eat?

No matter what you Eat, Use or Wear, buy it of McSTAY and save 25 to 50 per cent.

If you haven't been reading our ads start today. Send for our Catalogue No. 41-C and read of the thousands of **wholesale** prices on goods in retail quantities.

Lot B—The big $16.37 Order for only $11.75, which is given here, offers you such bargains as only a big wholesale house could afford to give you. All the items listed are things you need, why not order today—Lot B?

None of these Items sold separate at these Prices

Shipping weight about 200 pounds

25 Lbs. Dry Granulated Sugar. Special price this lot.....$1.25

50-Lb. Sack Queen Anne Flour. Highest patent family flour. Each sack, when empty, is a heavy twilled cotton face towel. Special price this lot.$1.35

10 Lbs. New Crop Pink Beans. Fancy recleaned. Special price this lot..51c

5 Lbs. New Crop Lima Beans. Special price this lot 35c

5 Lbs. German Lentils. Strictly fancy, and our own importation. Special price this lot 38c

1 Lb. Fancy Garlic. Special price this lot 9c

5 Lbs. Fancy 3-Crown London Layer Raisins. Special price this lot....39c

1 Gal. Can Lemon Cling Peaches. This is the whole peach, and with the addition of sugar makes a delicious table sauce. Special price this lot 27c

1 Gal. Can Royal Anne White Cherries. Delicious for pies or for sauce with the addition of sugar. Special price this lot 37c

1 Gal. Can Peeled Pie Apples. Use them instead of the fresh or dried fruit. Special price this lot.....26c

3 Cans Extra Quality Corn. This is our famous Holland sugar corn, none better. Special price this lot.....23c

2 Packages Jello. America's most popular dessert, any flavor. Special price this lot 15c

3 Cans Mustard Sardines. American pack, 5 cent size. Special price this lot 9c

1 Bottle Tobasco Sauce; 35 cent size. Special price this lot.....22c

2 Large Size Dold Dust, known and sold everywhere. Special price this lot 38c

2 Packages Peerless Mince-Meat. Regular 10 cent size. Guaranteed none better 14c

1 5-Lb. Carton Table Salt. Absolutely pure. Special price this lot..8c

1 Bottle Mason's A-1 Imported Table Sauce. Regular 25 cent size. Special price this lot 20c

1 Bottle Heinz India Relish. Regular 30c size. Special price this lot 20c

1 Gal. Kit German Dill Pickles. This is the medium size Salt Pickle, very fine. Special price this lot.....59c

2 ½-Lb. Tins Armour's Chipped Beef. This is recognized as standard everywhere. Special this lot.....23c

2 1-Pt. Cans Delmonico Table Syrup. Regular 10 cent size. Delicious. Special price this lot.....14c

5-Lb. Tin B. 1 Blend Coffee. One of our highest grade Coffees; retails 40c lb. Special price this lot....$1.50

1 Lb. No. C. Tea. Regular 75 cent grade. Name your tea. Uncolored Japan, Green Japan, Gunpowder, English Breakfast, Ceylon, Oolong or Young Hyson. Special price this lot 44c

2 Bottles Pure Flavoring Extract. One 4 oz. lemon and one 4 oz. vanilla; our own manufacture—triple strength. Special price this lot.....53c

5 Lbs. Unpolished Japan Rice. This is the finest rice produced. Retails 10c to 12½c per lb. Special price this lot 34c

10 8-Oz. Bars Special Laundry Soap. This is our leader of Laundry Soaps. Special price this lot.....27c

1 Gal. Pure Rock Candy Drips. The purest and finest syrup made. Royal Brand. Special price this lot.....80c

RETAIL PRICE ***$16.37***

OUR PRICE ***$11.75***

FIGURE THE SAVING

Saves you 35 per cent. Deduct your freight bill from this amount, and it will show you a saving of from 25 to35 per cent.

You must know that this Company is not a regular Mail Order firm, but a big wholesale and manufacturing concern. We sell at retail and charge wholesale prices. Our big catalogue, No. 41-C, contains lists and prices of groceries, clothing, poultry supplies, hardware, in fact about everything you need.

Send for this Catalogue TODAY.

McSTAY SUPPLY COMPANY

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Wholesale Grocers, General Merchandise, Manufacturers

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E. Third Street, Los Angeles, Cal.

California Deciduous Fruit Protective League

By Geo. D. Kellogg, Before Cal. Fruit Growers

Unlike the Citrus Protective League, only in the fact that we have the interests of different commodities to protect, and that they have already had experience and achieved victories; while we are only in the camp of instruction and have yet to get our equipment and put ourselves in training for the firing line, preparatory to the removal of the oppositions which are confronting us.

At the Watsonville convention in 1909 the committee on resolutions brought in a report favoring such a league, and a large committee was appointed to take the matter up and organize.

In January, 1910, the committee held two meetings in Sacramento; they organized by the election of officers; they adopted the name of the "California Deciduous Fruit Protective League." They included the dried fruit and nut interests of the state in the organization. There seeming to be a lack of competent leadership available that could give time to the work, and with no organized financial backing, the movement was abandoned for the time.

On Nov. 6, 1911, at a large and representative convention of growers and shippers of fruit held in Newcastle, where standardization rules had been perfected and the system had been unanimously continued, the convention seeing that we were advancing along correct lines, but were lacking in proper alignment and concentration of our forces, the following resolutions were unanimously adopted:

"Be It Resolved, By this Placer County Fruit Growers' and Shippers' Association, in annual session assembled, That we recommend the organization at once of a Protective League, which will include all deciduous fruits and nut interests of California, said Protective League to be properly safeguarded by a board of directors, representing all such interests, they to employ a competent manager to make the organization effective.

"And be it further resolved that having confidence in the wisdom, integrity and ability of J. W. Jeffrey, we do now recommend him as manager, and invite him to take up the matter at once, and perfect such a league, and we pledge ourselves to its support."

Another meeting of citizens of the Sacramento Valley convened in the city of Sacramento at a later date, at which some delegates from the Newcastle meeting were present; advanced positions were taken, and the league was made possible by the voluntary and liberal contributions of those present from different sections of the state. J. W. Jeffrey was again the unanimous choice to inaugurate and put in motion the California Deciduous Fruit Protective League. Mr. Jeffrey accepted the position, and has established his temporary headquarters at 408 Oschner building in Sacramento.

While no definite plans have been adopted as yet, the Protective League has advanced beyond the embryo stage; it is born, and already showing vigorous life, and by proper care of ourselves, it may soon attain the strong stature of efficiency, and do valiant work for our united interests. I can only speak of what the originators of the plan had in mind, of the scope and objects of the league; a little more mature thought and deliberation may take from or add to the original plans, which appeal to my calm, unprejudiced, and better judgment, about as follows:

1st, harmonize and organize all competitive interests into a co-operative league so far as exploiting and developing new markets is concerned. The details of the plan would have to be worked out by a competent board of directors. They could incorporate in their plans, some system by which all markets could be kept supplied, and the danger of oversupply for all markets be largely eliminated. The trade could also be controlled to better advantage, and dishonest dealers disciplined to a larger extent.

2nd. Matters pertaining to transportation, export and import duties, standardization, and many other matters of common interest to the fresh, dried and preserved fruit producers, together with the vast nut interests of the state. This enormous amount of tonnage consolidated into a harmonious compact body, could speak with authority and power that would command a respectful hearing before any tribunal, and to a large extent, get redress for any wrongs that we may become restive over.

I shall not attempt at this time to speak further of the possibilities of such a league; although I thoroughly believe that there is at this time a large open door of opportunity for its inauguration, covering the foregoing interests, and many others which may be developed by a vigorous prosecution of the plans that may be entered into by a competent advisory and executive committee, to be executed by a live and capable manager.

The manager who has already been selected, and entered upon the work, is well known to us all, ex-State Horticultural Commissioner J. W. Jeffrey, who has shown great executive ability and an intelligent interest in the fruit industry of our state. He is thoroughly acquainted with our wants, familiar with this class of work, his honesty and integrity unquestioned; in him we would seem to have an ideal executive officer.

So far as I am informed, there has been no organized plan to finance this important work other than voluntary subscriptions, which have only been sufficient to inaugurate the movement. I trust this convention will approve of the organization of such a league, and give it some form of indorsement, and render it such assistance as may be consistent that will make it effective. I presume that the league itself, through its organization, would have to devise its own financial plan that will insure its permanent stability. Our state horticultural commission will ever have a common interest in the work of such a league, and it is to be desired that there should be the utmost harmony between these organizations.

Our worthy state commissioner of horticulture, Prof. A. J. Cook, gave his most hearty support to a movement of this kind at our convention at Newcastle, in which he pledged himself to give it such assistance and co-operation as could be found within the power of his office. So, by united effort, we shall look forward to good results coming from the permanent organization of the California Deciduous Fruit Protective League.

Household Department

CHRISTMAS.

By a beautiful road our Christmas comes,
A road full twelve months long,
And every mile is as warm as a smile,
And every hour is a song.
Flower and flake and cloud and sun,
And the winds that riot and sigh.
Have their work to do ere the dreams come true,
And Christmas glows in the sky.

The holly and cedar and mistletoe.
They thrilled, when the nights were chill,
For the maiden's glance and the madcap dance
And the lover's foot on the sill.
For the Christmas mirth and brave pine grew,
Serene and straight and tall,
The deep woods knew in their dusk and dew
When the dearest of days would fall.

To the beautiful home our Christmas comes,
The home that is safe and sweet,
With its door ajar for the beam of the Star,
And its corner for love's retreat.
There the mark on the wall for the golden head
Is higher a bit, for lo!
Between Christmas coming and Christmas sped
There's time for the bairn to grow.

Our Christmas comes with a royal grace,
(Forget the ancient grudge!)
'Tis the open hand that must bless the land,
(Uplift the toiling drudge!)
And who that has gifts shall hold them back,
And who that has cheer shall wait,
When there's joy in the sky, and the ill things fly,
And the Christ-Child knocks at the gate.

'Tis a beautiful time when Christmas comes
All up the street and down,
For hearts alight makes faces bright
When Christmas comes to town.
Neighbor and friend in gladness meet
And all our neighbors dear,
When the Christmas peace bids evil cease
In the holiest day of the year.

The fair white fields in silence lie,
Invisible angels go
Over the floor that sparkles hoar
With the glitter of frost and snow.
And they scatter the infinite balm of heaven
Wherever on earth they stay.
And heaven's own store of bliss they pour
On the earth each Christmas Day.

'Tis a beautiful task our Christmas brings
For old and young to share,
With jingle of bells, and silvery swells
Of music in the air.
To make the sad world merry awhile,
And to frighten sin away,
And to bless us all, whatever befall,
Is the task of Christmas Day.
—Margaret E. Sangster.

A SNOWBOUND SANTA CLAUS.

By Izola Forrester.

The Pacific Overland Express from Omaha to the coast stopped short with a slow, reluctant jerk. For over ten miles since noon it had tried to make its way through the snowbergs that lay in huge drifts on the track, and now it gave up the fight and rested at the eastern base of the Great Bear Pass.

Nell blew on the frosted window pane until she had melted a peep-hole to look through.

"Just mountains, and mountains everywhere," she announced dolefully, and four other young Harrisons listened in doleful sympathy. Christmas in a snowed-up car would be something dreadful.

"It's five o'clock now," said Max, "and the conductor says we won't be out before tomorrow, maybe, because they've got to telegraph for a snowplow to help us out."

Curled together in a disconsolate heap on one seat Benjy hugged Tomikins up close, and they sobbed in united woe.

"No candy, no turkey, no ballses, or dollies, or anysing," cried Tomikins.

"And no Santa Claus, too," added Benjy, with a fresh howl.

Even Jeanette, as big sister, felt the tears gather slowly in her eyes, in spite of her fifteen years, as she thought of the thirty-six miles that lay between them and Silver City.

"Will Santa Claus find us 'way out here?" asked Nell.

"Sure he'll find us," promised Max, valiantly. "He'll make a bee line right over the mountains with those ponies of his——"

"Reindeerses," prompted Benjy, sitting up and taking an interest in life once more.

"Don't you suppose that papa's beginning to worry about us, Jeanie?" asked Max.

Jeanette nodded her head. She knew if she tried to speak she would curl up in a heap like the twins and have a good hard cry.

At the end of the train, in the private car Pocahontas, sat Mr. John P. Ridley. It did not please Mr. Ridley that the Pacific Overland Express should be held up by a snow storm.

He kept his private porter busy running back and forth through the train, finding out what chances there were of getting through Great Bear Pass that night. It appeared that Mr. Ridley was especially anxious to get through that night for two reasons. The boxes and numerous small pieces of baggage that were stacked in one end of the car explained one of these reasons. The explanation of the other Mr. Ridley reserved to himself, to the telegraph operator back at Barker Junction, and to Warren, general manager of the Lakota mines in Silver City.

He was sorry for Harrison. He was a hard worker and thoroughly competent, but they needed a younger, quicker man as assayer at the Lakota mines. Harrison was, if anything, too painstaking. He experimented. Also, he was strictly conscientious. If it had not been for the coming deal in the Sunset mine he might have kept him; but a thing like that needed a different sort of a man. Not that it wasn't a "square deal." He declared himself that the Sunset was a good thing, and only half developed, but so far the output had not justified the price he had put on it. In case of questions asked by the buyers, he did not want exactly a false report made by the assayer, but he did want a man who could see beyond the specimens in his hands and who would look after the interests of his employer enough to prophesy favorably on the future of the Sunset. Harrison was not good at prophesying.

Therefore a telegram had gone forth from Barker Junction which rendered the position of assayer vacant, and Mr. Ridley was very anxious to arrive in Silver City in time to meet the new assayer from Butte and instruct him on a few minor points of prophesying, before the buyers for the Sunset should interview him.

When six o'clock came he had his private dinner prepared in his private kitchen by his private chef, and he enjoyed it as well as his dyspepsia would permit him to enjoy anything, while in the cars ahead the general public rummaged in lunch boxes and baskets, and shared with one another remains of cold chicken and ham sandwiches in philosophical merriment over the situation.

At half past eight Mr. Ridley found his privacy growing monotonous. On Christmas Eve, in a snow-bound train, stranded in the heart of the Rockies, privacy is a bore, and so Mr. Ridley took a stroll through the train.

He found relief for a while in the smoking compartment of the first sleeper. There were several persons aboard the train who recognized the value of Mr. Ridley as a fellow passenger, and were glad to make him welcome.

He had noticed in passing through the sleepers a rather noisy crowd of youngsters who were singing, playing

California Cultivator
Clubbing Price List

For Season 1911-1912

This magazine price list is prepared annually for the convenience and benefit of Cultivator subscribers. The prices given allow our readers the benefit of the lowest figures possible, in return for which, all we require is that to all orders a year's subscription to The Cultivator (class 18) be added at 90c (regular price $1.00 per year).

Find on this sheet a very complete list of the most popular magazines. We can, however, supply any periodical published. The lowest price on any not listed here will be quoted on request. Let us make you a price on any combination you may desire.

Periodicals in any combination may be ordered to the same or different addresses. Foreign or Canadian subscriptions are extra on account of added postage, and prices must be gotten by correspondence. Subscriptions may be either "new" or "renewals (except where otherwise stated in the list), but it is important that this information be given in each case.

Books—Send us a postal for our list of agricultural books which we supply subscribers and which we recommend as most suited to California conditions.

The pricing of various combinations of magazines is a simple matter; all are listed according to class number and this class number multiplied by 5 gives the cost price.

EXAMPLE:

Class No.	Regular Price
23—American Magazine	$1.50
35—The Review of Reviews	3.00
20—Good Housekeeping (or Cosmopolitan	1.50
18—Cultivator	1.00
96×5=$4.80—Club price for all. Amount saved on this club	$2.20

CLASS 7.

American Hen Magazine	$0.50	Any two Class 7 with Cultivator $1.60
American Poultry Journal	.50	
American Poultry World	.50	
Every Woman's Magazine	.50	
Poultry Culture	.50	
Reliable Poultry Journal	.50	

CLASS 8.

American Messenger	$0.50	Any two Class 8 with Cultivator $1.70
Boys' World	.50	
Farm & Fireside	.50	
Farm-Poultry	.50	
Girl's Companion	.50	
Ladies' World	.50	
Northwest Poultry Journal	.50	
Todays Magazine	.50	

CLASS 9.

Inland Poultry Journal	$0.50	One of Class 9 with Cultivator $1.35
McCall's Magazine & Pattern	.50	

CLASS 12.

Designer	$0.75	Any one Class 12 with Cultivator $1.50
Every Day Housekeeping	.75	
Home Needlework	.75	
Modern Priscilla (Needlework)	.75	
New Idea Woman's Magazine	.75	
Young People's Weekly	.75	

CLASS 15.

Architect, Builder and Contractor	$1.00	Any one Class 15 with Cultivator $1.65
Baby	1.00	
Business & Bookkeeper	1.00	
Concrete	1.00	
Motor Print	1.00	
Northwestern Agriculturist	1.00	
Watson's Magazine	1.00	

CLASS 16.

Amateur Sportsman	$1.00	Any one Class 16 with Cultivator $1.70
Black Cat	1.00	
Cooking Club Magazine	1.00	
Fly	1.00	
Health	1.00	
Judge's Library (A magazine of fun)	1.00	
Judge's Quarterly	1.00	
Kindergarten Primary Magazine (new)	1.00	
Orange Judd Farmer	1.00	
Prof. & Amateur Photography	1.00	
Uncle Remus Home Magazine	1.00	
Woman's Journal (new)	1.00	

CLASS 17.

American Bee Journal	$1.00	Any one Class 17 with Cultivator $1.75
American Boy	1.00	
American Baby	1.00	
American School Board Journal	1.00	
American Primary Teacher	1.00	
Boston Cooking School Magazine	1.00	
Boy's Magazine	1.00	
Camera (Previous to Jan. 1st, 1912. See Class 23)	1.00	
Camera Craft (new)	1.00	
Children's Magazine (new)	1.00	Any two Class 17 with Cultivator $2.60
Kindergarten Review	1.00	
Little Folks (new)	1.00	
Musical Observer	1.00	
Modern Electrics	1.00	
Motor Field	1.00	
Nautilis (new	1.00	
Popular Electricity (Previous to Jan. 1st, 1912)	1.00	
Pictorial Review	1.00	
Success-National Post	1.00	

CLASS 35.

Current Literature	$3.00	Any one Class 35 with Cultivator $2.65
Lippincott's	3.00	
Review of Reviews	3.00	
Survey (new)	2.00	
Trained Nurse	2.00	
Travel	3.00	
World Today	3.00	
Youth's Companion (Previous to Jan. 1st, 1912. See Class 40)	1.75	

CLASS 40.

Recreation	$3.00	One of Class 40 with Cultivator $2.90
St. Nicholas (new)	3.00	
Youth's Companion (After Jan. 1st, 1912)	2.00	

CLASS 20.

Automobile Topics	$2.00	Any one Class 20 with Cultivator $1.90
Cosmopolitan	1.50	
Good Housekeeping	1.50	
Harper's Bazaar	1.25	
Hoard's Dairyman	1.00	
McCall's 3 yrs. & 3 patterns	1.50	
Munsey's	1.00	
Opportunity	1.50	

CLASS 22.

Out West	$1.50	Any one Class 22 with Cultivator $2.00
Popular Educator	1.25	
Primary Education	1.25	
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CLASS 23.

American Magazine	$1.50	Any one Class 23 with Cultivator $2.05
Breeders' Gazette	1.75	
Camera (After Jan. 1st, 1912)	1.50	
Etude (For all music lovers	1.50	
Everybody's Magazine	1.50	
Field & Stream	1.50	
Garden Magazine	1.50	
Good Health	1.50	
Housekeeper	1.50	
McClure's Magazine	1.50	
Metropolitan Magazine	1.50	
Musician	1.50	Any two Class 23 with Cultivator $3.20
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Pacific Monthly	1.50	
Pearson's Magazine	1.50	
Physical Culture	1.50	
Popular Electricity (After Jan. 1st, 1912)	1.50	
Sunset Magazine	1.50	
Technical World	1.50	
Woman's Home Companion	1.50	
Yachting	2.00	

CLASS 25.

Farm Journal (10 yrs.)	$1.50	Any one Class 25 with Cultivator $2.15
Overland Monthly	1.50	
Violinist	1.50	

CLASS 30.

Ladies' Home Journal	$1.50	Any one Class 30 with Cultivator $2.40
Ladies' World, Modern Priscilla and Pictorial Review	2.25	
Popular Mechanics	1.50	
Saturday Evening Post	1.50	

CLASS 47.

Automobile	$3.00	Any one Class 47 with Cultivator $3.25
Bookman	2.50	
Forest & Stream	3.00	
Motor Age	3.00	

CLASS 50.

American Homes & Gardens (new)	$3.00	Any one Class 50 with Cultivator $3.40
Bit & Spur	3.00	
Education (new)	3.00	
Outing Magazine	3.00	
Scientific American (new)	3.00	

CLASS 70.

Country Life in America	$4.00	Any one Class 70 with Cultivator $4.40
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Harper's Weekly	4.00	
Keramic Studio and 4 Color Studies (new)	4.00	
North American Review	4.00	
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MISCELLANEOUS.

Ainslee's	$1.80	Class 27
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American Photography	1.50	Class 24
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Electrician & Mechanic	1.50	Class 24
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Judge	5.00	Class 95
Leslie's Weekly	5.00	Class 95
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Scribner's	3.00	Class 60
World's Work	3.00	Class 37

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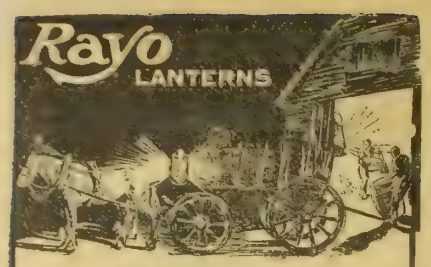

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games and otherwise having a jolly time.

It was after eleven when he left the smoking compartment. On his way back through the cars the conductor met him and explained apologetically that the wires were down for several miles ahead in the pass and it had been necessary to send back to Barker Junction in order to telegraph ahead for a snow plow. It might be several hours before they could go on—possibly not before the next morning.

Mr. Ridley was annoyed. As he went on through the narrow curtained aisles of the sleepers, he felt vaguely resentful toward the whole system—railroad, snow storm, passengers and all—as a combined force of circumstances that could detain a man like John P. Ridley against his will. Suddenly he stopped short before section four in the third sleeper. The two berths were made up, and they were close quarters, too. In the upper one slept Max, and the twins (Benjy cuddled up crosswise at the foot) and in the lower were Nell and Jeanette.

But all that Mr. Ridley saw was a row of stockings pinned up on the long curtains like misplaced tails on a donkey sheet. He stared at them through his eyeglasses thoughtfully. Two small ones just alike—well darned around the toes and heels, one long, double-kneed one for a boy who might possibly play marbles, and two fine-ribbed ones with small feet.

After a minute's inspection, Mr. Ridley walked back to the end of the car and had a talk with the porter. When he had finished he knew the personality of each stocking and the requirements of its owner. And then a very peculiar thing happened on the Pacific Overland Express. Back and forth between the third sleeper and the private car Mr. Ridley's private porter marched, his arms full of boxes and parcels; and when it came to opening them before section four, Mr. Ridley himself took a hand.

When the five stockings were full and bulged out at the tops, there were other parcels placed cautiously in the little hammocks that hung at the head and foot of the lower berth, and Mr. Ridley caught a glimpse of Nell's brown pig-tails, and Jeanette's yellow curls lying side by side on the pillow. When he returned to the private car after all was done he was smiling comfortably to himself, and had forgotten all about the wretched facilities of railroads for dealing with snow storms. At home there were two heads, very similar to those in section four, waiting for papa to come. That was the first reason why Mr. Ridley wanted to get over Great Bear Pass that night.

But, just as the private porter gathered up the last pieces of string and paper from the aisle and started away after Mr. Ridley, Max's head appeared at the curtain opening of the upper berth. His hair was standing on end as only the hair of a pillow-tousled boy can act, and his eyes were round with sleepy, surprised amazement when he saw the bulging stockings.

In half a minute he had dropped from the berth and a small white ghost in baggy night clothes stole through the cars after Mr. Ridley, and never stopped until the vestibule door of the Pocahontas shut out the world from its privacy.

At half-past seven on Christmas morning the snow plow came through Great Bear Pass. The blizzard had stopped and it was clear and cold. A committee of five waited for admittance in the vestibule of the Pocahontas while Mr. Ridley bathed, shaved and dressed. It was a joyous, excited committee Max led as guide, with Nell hugging his shoulder, and Jeannette tried to hold the twins in check, until finally the private porter ushered them in past the tiny kitchen and pantry, all shining brass and tiles, past the little compartment dining room, into the parlor section, with its dark green hangings and deep, low willow chairs, its bookcases and piano, and broad windows.

Mr. Ridley rose from his desk to greet them. It was an awkward moment. Max and the girls waited doubtfully for each other to speak, until Tomikins broke the ice.

"Merry Cwismus!" he said.

"The same to you, sir," responded Mr. Ridley, a twinkle gleaming in his eyes. "Merry Christmas to you all!"

Then Jeanette began, "We came because we wanted to thank you for ——"

"For being Santa Claus——" added Nell eagerly.

"I saw you," exclaimed Max, forestalling any possible disclaimer. "I looked over the top of the curtains. My! But you just ought to have seen the kiddies when they found those music boxes!"

Christmas is a lonesome affair all by one's self. There were five guests in Mr. Ridley's dining room, and it was such a merry, delightful breakfast that no one noticed the time until the train began to move slowly forward.

"We're going!" shouted Max joyously. "Rah! I really believe that papa stayed in the depot all night."

"Are you going to Silver City?" asked Mr. Ridley.

Of course they were. Why, didn't he know that before? Individually and in chorus they all told him how it happened. 'Way back, when the twins were only a year old, the dearest little mother in the world was called to rest, and since then they had lived in Chicago with Grandmother Wilcox until papa could take them all. It had been a long time to wait—almost three years—and they had been rather poor, too.

"Not raggedly poor," protested Nell. "Just shiny."

But now everything was changed. Max's brown eyes sparkled with sturdy pride as he told how his father was assayer at the Lakota silver mines in Colorado. Perhaps Mr. Ridley had heard of them. It appeared that Mr. Ridley had—slightly. It was a fine position Max assured him, and steady too. That was why papa had sent for them all to come to him, because he was sure it would last. And it wouldn't be hard at all, because Jeannie was going to be housekeeper and they would all help her; and, last of all, they just wanted to tell Mr. Ridley one thing—there wasn't a single father in the whole world quite as splendid as the one who was waiting for them in the depot at Silver City.

Mr. Ridley listened, a twin on each knee, and smiled. When breakfast was over, Jeanette said they must go back, because the kiddies were clamoring for their music boxes. So they waved their hands to him from the vestibule and called "Marry Christmas." After they had gone Mr. Ridley went and stood before one of the car windows looking out at the flying stretches of pine-dotted mountain side.

Finally he turned to his desk. A pad of telegraph blanks lay on it, and he wrote a message and called the private porter.

"Send this as soon as we reach Crescent," he said.

It was the last gift from Santa

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The canal, drainage and road construction has been completed on the Delevan and Maxwell Units and these lands are now being sold in 10, 20 and 40-acre subdivisions.

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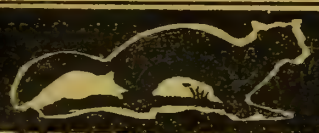

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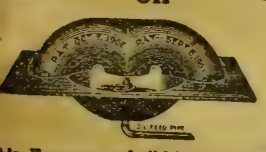

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AUNTIE BROWN'S CHRISTMAS SHOPPING ADVICE.

By Alice Jean Cleator.

The morning after Christmas Day
I met my Auntie Brown.
She caried packages galore
And was en route down-town.

Said she, "To see me out today
You seem to think is strange,
But listen, niece, each gift I gave
I'm taking to exchange.

"The slippers which I bought for John
Were just three sizes small.
The smoking jacket was too large
For Uncle Percival.

"And, oh, the gloves for Cousin Sue
Should have been number six;
I ordered them with Johnny's skates,
And got the sizes mixed.

"And Rob's fur cap was so immense
It quite obscured his face;
The rings and bracelets were too small
For Marjory and Grace.

"Well, I must go," she sighed, "but, niece,
Whene'er you give surprises
Of Christmas gifts, don't ever give
A thing that comes in sizes."

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Claus; and Warren, general manager of the Lakota mines smiled when he received it. It read: "Retain Harrison." (sgd.), J. P. Ridley. —Outing.

CHRISTMAS SUGGESTIONS IN RECIPES.

Fruit Salad.

Fruit Salads are frequently served at luncheon—sometimes as a first course—and may be made of one fruit or a combination of several; those most commonly blended being grapes (skinned and seeded), oranges, grape fruit, bananas and apples. Serve with French or mayonnaise dressing.

The chief rules to be remembered in making salads are:

All salads likely to be dry, as well as those having no dominating flavor, are better if they are marinated with a French dressing some time before serving, in addition to the dressing added at table.

It is not enough to wash the salad plants; they must be dried also, for the dripping from the leaves in the serving dish would thin the dressing and make it insipid.

A good portion of the dressing must be mixed with the salad, not all poured over the top.

Cabbage Salad.

Put the milk and vinegar on to heat in separate sauce-pans; when the vinegar boils, add butter, sugar, salt and pepper, and stir in the chopped cabbage; cover, and let scald and steam—not boil—for a moment, meanwhile, remove hot milk from stove, cook a little, and stir in the well-beaten and strained yolks; return to stove, and boil a moment. Dish cabbage and pour custard over it, stir rapidly with a silver spoon until well mixed, and set immediately in a cold place.

Plain Cold Slaw.

Slice cabbage very fine, season with salt, pepper, and a little sugar; pour over vinegar and mix thoroughly. It is nice served in the center of a platter with fried oysters around it.

Cranberry Sauce or Jam.

Cook berries with ¼ of their measure of water till soft. Put through colander to take out skins. Add equal amount of sugar and cook five minutes.

Roast Pork.

A small loin of pork, three tablespoons breadcrumbs, one onion, half a teaspoon chopped sage, half teaspoon salt, half teaspoon pepper, one ounce choped suet, one tablespoon drippings. Separate each joint of the loin with the chopper, and then make an incision with a knife into the thick part of the pork in which to put the stuffing. Prepare the stuffing by mixing the breadcrumbs together with the onion, which must have previously been finely chopped. Add to this the sage, pepper, salt and suet, and when all is thoroughly mixed, press the mixture snugly into the incision already made in the pork, and

(Continued on Page 669.)

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Ladles	25
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Northern Fresh	17½
Domestic Swiss	18
Imported Swiss	33

Eggs and Poultry.

Receipts of fresh stock have been very light, and the demand has kept the market clean. Storage has been heavily drawn upon. Market very firm.

Buying prices f. o. b. Los Angeles are:

Local Ranch Candled	43
Case Count	39
Eastern Storage	27@28
Pullets	26

Dealers pay for live poultry f. o. b.:

Hens, lb	12@15
Roosters	8
Broilers	22
Fryers	15
Roasters	15
Turkeys	18@20
Ducks	14
Geese	14
Guinea Hens, doz	4.00
Squabs, doz	1.75

Live Stock.

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs	6¾
Prime Steers	6
Heifers	6
Calves, lb	6½
Sheep, Ewes, head	4.75
Lambs, head	3.75@4.25
Wethers	5.00@5.60

Potatoes.

Wholesale prices are:

Sweets, Yellow, cental	2.25
Highlands, cental	1.60@1.85
Salinas	2.00@2.10
Lompoc	2.00@2.10
Oregons	2.10@2.25
Oregon Early Wonder	2.40@2.50

Onions.

Wholesale quotations:

Australian Brown, cental	1.75
Yellow Danvers, cental	1.75
White Wax	1.60@1.75
Garlic	6@8

Vegetables.

Wholesale quotations:

Artichokes, Northern, doz	90@1.10
Beets, doz bunches	40
Bell Peppers, lb	9@10
Brussels Sprouts, lb	10
Beans, Limas	10@12
Beans, Wax	10@12
Beans, Green	10@12
Chilis, Green	7@8
Chilis, Red	15@16
Cucumbers, lugs	75@1.50
Cabbage, sack	1.10
Cabbage, Red, lb	3@3½
Cauliflower, crate	1.25@1.50
Celery, crate	3.50@4.00
Carrots, sack	1.00
Egg Plant	8@10
Horseradish, lb	13½
Onions, Green, doz bunches	15@20
Kohl-rabi, doz bunches	40
Leeks, doz	40
Lettuce, crate	1.25@1.50
Mushrooms, lb	50@1.00
Oyster Plant, lb	15@20
Okra	10
Peas, lb	5@7
Parsnips, doz bunches	45
Parsley, doz bunches	25@30
Turnips, sack	1.25
Radishes, doz bunches	15@20
Rhubarb, Crimson Winter	1.10
Spinach, doz	15@20
Squash, Summer	1.00
Spearmint, doz	25@30
Tomatoes, lug	75@85
Watercress, doz	35@40

Citrus Fruits.

New Navels	2.50@3.50
Grapefruit, Seedless	3.00@3.25
Limes, hundred	1.25
Lemons	2.50

Fresh Fruits.

Wholesale prices on the market are:

Alligator Pears, doz	5.00
Apples, Bellflowers	1.10@1.35
Apples, Spitzenbergs	1.10@1.50
Apples, Pearmains	1.25
Apples, Jonathans	2.25@2.35
Bananas	4½
Casabas, crate	2.00@2.25
Christmas Melons, crate	2.00@2.25
Grapes, Muscats	1.50@1.75
Grapes, Tokays	1.50@1.75
Grapes, Cornichon	1.50@1.75
Peaches, lug	1.50@1.75
Pineapples	8@9
Quinces, lug	1.00@1.10
Persimmons	1.25@1.75
Pomegranates, lug	75@1.25
Pears, Bartlett, lb	7½
Blackberries	12½
Raspberries	10@12
Strawberries	12@15

Dried Fruits.

Wholesale prices to retailers are:

Evaporated Apples, fancy, lb	11@11½
Apricots	16@17
Figs, box	1.50@1.75
Peaches	11@12½
Nectarines	12
Pears	12@13
Prunes	7½@14
Plums	10

Beans, Dried.

Wholesale quotations:

Limas	6.50
Black Eyes	4.50@5.00
Pinks	3.75
Lady Washington	4.75
Small White	4.75
Garvanzas	4.50
Bayous	4.50@5.00
Lentils	8.00
Mexican Reds	3.75@4.00

Nuts.

Wholesale quotations:

No. 1 Soft Shell Walnuts	14@15
No. 1 Hard Shell Walnuts	13½
No. 2 Walnuts	11
Almonds, IXL, fancy, lb	18½@22
Pecans, polished	15@17
Pecans, Eastern	8
Peanuts, California	5@5½
Pine Nuts	16

Honey.

Wholesale quotations:

Extracted Water White	8½
Extracted Light Amber	7½
Comb Water White	16@17
Light Amber	14@15
Beeswax	30

Hay.

Hay market very firm, with promise of still higher figures unless rain comes soon.

Buying prices f. o. b. cars Los Angeles:

Barley Hay	18.00@20.00
Wheat Hay	16.00@18.00
Tame Oats	20.00@22.00
Alfalfa	16.00@17.00

Grain.

Wholesale selling price f. o. b. Los Angeles:

Wheat, new, cental	1.75@1.80
Corn	1.70@1.95
Kaffir Corn	1.80
Millet	3.75
Popcorn	4.75@5.00
Egyptian Corn	1.80
White Oats	1.95
Seed Barley	1.50
Milo	1.95

Feed Stuff.

Wholesale selling price f. o. b. Los Angeles:

Alfalfa Meal	1.25
Beef Scrap	3.10
Bone Meal	2.05
Charcoal	2.10
Cracked Corn	2.00
Cracked Wheat	1.90
Shorts	1.85
Bran	1.60
Oil Cake Meal	2.65
Feed Meal	2.05
Rolled Barley	2.10
Rolled Oats	2.00
Middlings	1.85

In the great household of nature, the farmer stands at the door of the bread room and weighs to each his loaf.—Emerson.

San Francisco Market

SAN FRANCISCO, Dec. 19, 1911.

Butter.

Butter stands at practically last week's quotations, with a very firm condition obtaining. Receipts, about 110,000 pounds daily.

Prices to trade 2½c in advance of the following Produce Exchange quotations:

California Extras, lb	32
Prime Firsts	27½
Firsts	27
Seconds	26
Storage Extra	28

Cheese.

California Flats	14@17
Cal. Young America, fy, new	15½@17
Oregon, fancy	15½

Eggs and Poultry.

Select pullets are down several points, and weak at the reduction. Extras are firm and in good demand.

Official quotations of the San Francisco Wholesale Dairy and Produce Exchange are:

Fresh Ranch Extras	38
Firsts	42
Select Pullets	30
Hens	3.50@9.00
Fryers, doz	5.00@5.50
Ducks	4.00@9.00
Broilers	3.00@4.50
Roosters, doz	4.00@9.00
Geese	2.00@3.00
Goslings, pair	2.00@2.25
Pigeons	1.50@2.00
Turkeys	20
Squabs	3.00@4.00

Live Stock.

San Francisco prices, gross weight:

Steers	4@6
Cows and Heifers	3@5
Calves, lb	5½@6¾
Hogs	6¼@6½
Wethers, No. 1	3¾@4
Lambs	5
Ewes, No. 1	3¼@3½

Potatoes.

Wholesale market quotations:

River Burbanks, cental	1.10@1.35
Alamedas	1.15@1.65
Sweets, cental	1.65@1.75
Salinas Burbanks	1.60@1.85

Onions.

Yellow, New	90@1.15
Garlic, new, lb	3@4

Vegetables.

Wholesale quotations:

Asparagus, box	1.00@1.75
Beans, String	7@14
Beans, Wax	2½@4
Limas	4@10
Bell Peppers, lb	5@7
Cabbage, cental	50@1.00
Cauliflower, doz	40@60
Carrots	40@60
Cucumbers, Southern, box	75@1.00
Corn, sack	50@1.25
Chile, lb	5@6
Celery, crate	2.25@3.00
Egg Plant, lb	5@7
Lettuce, crate	75@2.00
Okra, box	65@1.00
Peas, lb	4@8
Hubbard Squash, sack	40@60
Rhubarb, lb	5@6
Summer Squash, lug	85@1.25
Squash, Marrowfat	40@60
Tomatoes, box	75@1.10
Turnips	60@75

Citrus Fruits.

Navels	1.50@3.00
Navels, Standard	1.50
Valencias	3.25@4.50
Grapefruit, Seedless	1.75@3.25
Lemons	1.50@5.00
Limes, Mexican	4.00@4.50
Tangerines	1.15@2.35

Fresh Fruits.

Apples, Bellefleurs	90@1.25
Apples, Newtons	75@1.25
Apples, Spitzenberg	85@1.35
Cranberries, Coos Bay, box	4.00
Grapes	50@90
Pears, Winter, box	75@1.75
Persimmons	1.00@1.50
Pomegranates	40@2.00
Quinces, box	50@75
Strawberries	3.00@3.50
Pineapples, Hawaiian	3.00@3.50
Bananas, bunch	1.00@1.50

Dried Fruits.

FRUITS—1911 crop, f. o. b., carload lots, per lb: Apples, 8¼@9¼c; Apricots, 12½@15½c; Peaches, 9@10½c; Prunes, bulk basis, 6@7½c; per lb, 4¾@10c; Figs, 4¼@5½c for White; Pears, 9@12c.

RAISINS—1911 crop: Seeded, per pkg—Fancy, No. 16, 6½c; Choice, No. 16, 6¼c; Loose Muscatels, 50-lb boxes—Standard, 4-crown, 5¼c; 3-crown, 4¾c; 2-crown, 4¼c; Seedless Muscatels, 5½c; Sultanas, 6@6¼c; Thompsons, 7¼@7¾c.

Nuts.

Walnuts, No. 1 Soft Shell	14
Walnuts, No. 1 Hard Shell	13½
Almonds, Nonp	18@18½
Almonds, I X L	17½
Pecans	14¼@14½
Chestnuts, California	9@11
Peanuts	3@5

Beans, Dried.

Limas	6.00@6.15
Pink	2.75@2.90
Black Eyes	3.80@4.00
Small White	4.10@4.15
Large White	4.05@4.15
Kidneys	5.00@5.15
Garbanzos	3.00@3.25
Bayou	3.65@3.85
Red Mexican	4.40@4.50
Horse Beans	2.75@3.00
Cranberry	4.10@4.25

Hops.

Hops, Coast, 1910	35@38
Hops, 1911	42@46
Hops, Oregon, 1911	42@46

Honey.

Water White, Comb, 1911	15@16
Dark Comb	12½
Extracted White, 1911	8½@9½
Extracted Dark	5@6
Beeswax, lb	24@30

Hay.

Arrivals of hay during the past week have been 3,600 tons, which amount is a heavy increase over last week's small arrivals. Quite a bit of this amount consisted of alfalfa that was ordered forward for shipments. Somewhat of horse hay was brought in also for export.

The tone of the market has been quite bullish, and prices have advanced from our last week's quotations, and at this writing the feeling is strong and the tendency all points toward a better market.

There has been quite a little movement at some of our large centers. Hay has changed hands during the last week at prices that are above the basis of our present market here, showing the confidence in the situation by those large operators who have judged the present situation both around the bay and at interior points, and who are thoroughly in touch with conditions surrounding us.

The medium types are those that have shown the most marked advance, as there is a heavy demand at interior points at the present time for these varieties. Many of those holding this type of hay are unwilling to dispose of same until the outcome of the present situation can be more clearly seen.

Alfalfa hay has advanced sharply and quantities are now difficult to obtain, as this class of hay is in remarkably good demand at interior points where it is being fed to stock that usually at this time of the year depends upon pasture.

We quote the wholesale prices in round lots on today's market as follows, viz.:

Fancy Wheat Hay	20.00@21.00
No. 1 Wheat or Wh & Oat	17.50@18.50
No. 2 Wheat or Wh & Oat	13.00@15.50
Choice Tame	18.00@18.50
Other Tame Oat	12.00@16.00
Wild Oats	12.00@15.50
Stock Hay	9.00@10.00
Alfalfa	12.50@15.00
Straw, bale	60@70

Grain.

Wheat	1.47½@1.52½
Barley, fancy	1.75@1.77½
Barley, good to choice	1.70@1.72½
Barley, poor to fair	1.65@1.67½
Corn	1.60@1.70
Oats, White	1.72½@1.80
Rye	1.50@1.57½
Mustard, Brown	5½

Alfalfa Seed	17@18
Millet	2¾@3
Flaxseed	5@5½
Broom Corn Seed, ton	30.00

Feed Stuff.

Alfalfa Meal	15.00@17.00
Bran, ton	26.00@27.00
Feed Cornmeal, ton	38.00@39.00
Cracked Corn	38.00@39.00
Rolled Barley, ton	37.00@38.50
Rolled Oats, ton	37.00@38.00
Middlings	32.00@34.00
Oilcake Meal	42.00@43.50
Cocoanut Cake, ton	24.00@25.00
Mixed Feed, ton	25.00@27.00
Shorts	26.00@28.00

Citrus Fruit Market

LOS ANGELES, Dec. 20, 1911.

Southern California is not yet shipping very heavily, but packing houses in nearly every section are running to a limited extent. This is owing largely to the slowness of coloring. Tulare and Butte Counties have practically finished, at least as to heavier shipments. The fruit has been running well up to regular sizes and has good color.

The lemon market is decidedly quiet, though the holiday trade stimulated some sales which practically cleaned up the few shipments going forward.

Shipments.

Shipments from Southern California since November 1: Oranges, 816 cars; lemons, 667; total, 1,483. To same date last season: Oranges, 2,128 cars; lemons, 613; total, 2,741. Tulare and other central California counties up to December 18 shipped 2,870 cars of oranges and 68 cars of lemons; last year, same date, 1,938 cars all citrus fruits. Butte County and other northern sections, 387 cars oranges; last year's shipments at the same date, 104.

LOS ANGELES, Dec. 18.—Five cars navels sold. Note.—Standard grades 25c discount; 80s and larger, also 288s and smaller 25c discount, unless specially announced otherwise.

Brand. Grade. District. Shipped.	Avge.
Naralimo, fy, or, Washington navels, Fillmore, not shipped	$1.87½
Circus, ch, Washington navels, Fillmore, not shipped	1.62½
Honest Pack, fy, or, Washington navels, Tustin, Dec. 16, Chicago	1.60
Old Oak, sd, Washington navels, Tustin, Dec. 16, Chicago	1.35
Woodland, fy, or, Washington navels, Orange, Dec. 16, Kansas City	1.75
Silver Star, sd, Washington navels, Orange, Dec. 16, Kansas City	1.20
Honest Pack, fy, or, Washington navels, Orange, Dec. 16, Kansas City	1.55
Sorenata, or, Washington navels, Pomona, not shipped	1.65
Southern Cross, sd, Washington navels, Pomona, not shipped	1.40

* * *

NEW YORK, Dec. 18.—Twenty-four cars navels, one car Arizona navels, three cars lemons sold. Market easier on navels and lemons. Partly cloudy.

Navels.

	Avge.
Royal Crest, Stew. Ft. Co., Small	$2.50
Niagara, Stewart, small sizes	2.40
Royal Crest, Stewart Ft. Co.	3.20
Wahtoke	3.00
Antelope, imp	3.05
Antelope, imp	3.10
Duquesne, Duquesne Ft. Co.	2.75
Dusquesne, imp, Duquesne Ft. Co.	3.00
Fort Pitt, Duquesne Ft. Co.	2.50
Pioneer Special, Pioneer Ft. Co.	3.10
Pioneer Special, Pioneer Ft. Co.	3.30
Lily, fy, Merryman	3.55
Adobe, Merryman	2.85
Venus, E. Peycke Co.	2.85
Gold Buckle, R. H., E. Highland	3.20
Golden State, T. C. C. Ex.	3.70
Wisteria, S. A. Ex.	3.00
Paul Neyron, S. A. Ex.	2.85
Robusta, A. H. Ex., imp	2.95
Alta Cresta, A. H. Ex.	3.25
Robusta, A. H. Ex.	2.80
Kobo, A. H. Ex.	2.60
Mt. Whitney, T. C. Ex.	3.25
Diamond T.	3.70
Gilt Edge	3.25
Pride of West, Pioneer Ft. Co.	2.90
Sunflower, xf, O'Neill Ft. Co.	3.40
Mecca	3.15
Birch Bark	2.70
Mariposa, O'Neill Ft. Co.	3.30
Mallard, O'Neill Ft. Co.	2.90
Sunny Slope, fy, Randolph Ft. Co.	2.80
Arizonas.	
Tonto Brand	$4.10
Navels—Halves.	
Homer	$1.45
Robusta	1.55
Robusta	1.40
Sunflower, imp	1.70
Arizonas—Halves.	
Desert	$2.70
Cactus	2.00
Tonto	1.75
Lemons.	
Brownie	$2.65
Country Club	2.20
Solano	2.20
Symbol	2.10
Sumclass	1.75
East Highlands A	2.65
Silver Lemon	3.05
Pet	3.20
Greyhound	2.75
Whittier	2.85
Pico	2.55
Red Shield	2.85
El Azar	2.55
Green Crown	2.20
Watchumna	2.35

* * *

PHILADELPHIA, Dec. 18.—Six cars navels, two cars lemons sold. Also four cars Floridas. Oranges, $2.05 to $5.00; average, $2.50. Grapefruit, $2.05 to $5.60; average, $4.40. Market steady.

Navels.

	Avge.
Sentinel, Cen. Cal. Ex., Lind	$2.60
Quail, O. K. Ex.	3.10
Blue Jay, O. K. Ex.	2.20
Blue Jay, F. W. Young	3.15
Poinsettia, fy, O'Neill Ft. Co.	2.90
United	2.50
Sphynx, Cen. Cal. Ex., Lind	2.50
Coyote, O. K. Ex.	2.55
Oraignyos, Cen. Cal. Ex. Lind	3.10
Dry Bog Red, F. W. Young	2.85
Mars, E. Peycke Co.	2.75
United	2.30
Lemons.	
Rough Diamonds, V. C., Limco	$1.60
White Cross, V. C., Limco	2.10
Bridal Veil, V. C., Limco	2.70

* * *

CINCINNATI, Dec. 18.—Cool. Market steady on lemons, navels and Floridas. One car lemons, three cars navels and eleven cars Floridas sold.

Navels.

	Avge.
Vista Robles	$2.45
Gobbler	2.60
Niagara (small offs)	2.45
Lemons.	
Pet, S. A. Ex.	$2.85
Greyhound, S. A. Ex.	1.90
Arab, S. A. Ex.	2.75
Duck, S. A. Ex.	1.70

* * *

CLEVELAND, Dec. 18.—Six cars navels, one car lemons and one mixed car sold. Market firm on good stock lemons. Cold, cloudy.

Navels.

	Avge.
Forgetmenot, T.C.C., Ponca	$3.40
Gold Buckle, R.H., E. Highland	3.65
Sentinel, Cen. Cal., Lind	3.20
Jupiter, E. Peycke Co.	2.80
Vista De Robles, Stewart Ft. Co.	2.85
Homer, Q. C., Corona	3.55
Belt, R.H., E. Highland	3.15
Venus, E. Peycke Co.	3.40
Blue Mountain	3.00
Lemons.	
Pet, S. A. Ex.	$3.30
Belt, R.H., E. Highland	1.70
Greyhound, S.A. Ex.	2.40
Navels—Halves.	
Homer	$1.55

* * *

PITTSBURG, Dec. 18.—Eleven cars sold. Market strong on oranges; easier on lemons. Snowing.

Navels.

	Avge.
Golden Orchard, Ind. Ft. Co.	$3.05
Heart of Cal., Merryman, Exter.	3.35
Whittier, S. T., Whittier	2.50
Blue Label, Cen. Cal., Lind	3.10
Table Mtn., B. C. Palermo	2.75
Hollywreath, fy, O'Neill Ft. Co.	3.05
Adobe	3.15
Pocahontas, T. C. C., Lisco	3.15
Gold of Ophir, B. C., Palermo	3.05
Serenade, T. C. C., Sultana	3.05
Lemons.	
Transcontinental, S.S. El Modena	$3.15
El Modena, S.S., El Modena	2.25
Hawk, S. A. Ex.	1.90
Goldfinch, S. S., El Modena	2.65
Parrot, S. A. Ex.	2.45

* * *

ST. LOUIS, Dec. 18.—Clear, cold. Market steady on navels. Four cars sold.

Navels.

	Avge.
Searchlight, S. S. McPherson	$2.95
Woodpecker, Spring Valley	2.55
Gold of Ophir, B. C. Palermo	2.65
S. S. Brand, S. S., McPherson	2.25
Serenade, T. C. C., Sultana	3.05

* * *

BOSTON, Dec. 18.—Eleven cars sold. Clear, cool. Market strong on navels, easier on lemons.

Navels.

	Avge.
Pet, S. A., Ex.	$3.00
Gold Buckle, R. H., E. Highland	3.85
Homer, Q. C., Corona	3.25
Pioneer Special, Pioneer Ft. Co.	3.55
Pioneer Special	3.30
Greyhound, S. A. Ex.	2.50
Belt, R. H., E. Highland	3.55
Camel, Q. C., Corona	2.75
Poinsettia, fy, O'Neill Ft. Co.	3.40
Lotta	2.90
Lemons.	
Festival, Johnson Ft. Co. S. Bar.	$1.90
Stock, Johnson Ft. Co.	1.60
Tunnel, S. T., Fernando	2.35
Poinsettia, O'Neill Ft. Co.	3.00
E. Highland, A. E. High. Cit. As.	2.30
Eureka, Johnson Ft. Co.	3.15
Rey, S. T., Fernando	2.85
Belt, R. H., E. Highland	2.15
Excelsior, O'Neill Ft. Co.	2.50
Navels—Halves.	
Homer	$1.45

OROVILLE CITRUS SHOW.

(Continued from Page 643.)

Of course Paradise came in with a magnificent exhibit of apples, the Ehman Olive Company with olives and oil. Other sections made some remarkably fine exhibits.

The fruit prize winners were:

Largest exhibit of citrus fruits—First, Hammon orchards.

Best general exhibit of oranges, showing commercial pack—First, Butte County Citrus Association.

Decorative display of citrus fruits—First, Stewart Fruit Company.

Citrus fruits and packing demonstration—First, Crane and Son.

Neighborhood display of products—Wyandotte and Palermo colony, both first, and deserving of special mention; second, Honcut.

Farming and dairy products—First, Gridley.

Best special feature, exhibit of figs—First, W. H. McNamee.

Apple exhibit—First, Paradise; second, Cohasset. (Entitled to special mention.)

Nuts—Mrs. A. E. K. Bidwell, Chico.

Olives, nuts and citrus fruits—First, Los Verjeles Land and Water Company.

Individual Washington navel exhibit—First, Chambers orchards.

Lemons and grape fruit—First, Miller and Watkins.

Individual exhibit of diversified products—First, Sancomb and Finney, Thermalito, Deserving of special mention.

Olive products—First, Ehman Olive Company.

California grown rice—First, Balfour-Guthrie Company.

CHRISTMAS SUGGESTIONS.

(Continued from Page 667.)

sew together the edges of the meat with needle and thread, to confine the stuffing. Grease well a sheet of kitchen paper, with drippings, place the loin in this, securing it with a wrapping twine. Put to bake in a dry baking-pan, in a brisk oven, basting immediately and constantly as the grease draws out, and roast a length of time, allowing twenty minutes to the pound and twenty minutes longer. Serve with apple sauce or apple fritters.

* * *

Miss Katherine Meeder again furnishes us a couple of tested recipes. The first is for pudding, not the ordinary English plum pudding, but better and much easier made. We hope Cultivator readers will try it and report.

Christmas Pudding.

One cup molasses, 1 cup raisins, 1 cup currants, 1 cup suet (chopped fine), 2 cups flour.

I scant teaspoon soda and a little salt, allspice, nutmeg, cinnamon and cloves; add enough sweet or sour milk to make a stiff batter. Boil four hours. If put in two tins half the boiling will suffice.

Molasses Cake.

One cup molasses, ½ cup sugar, 1 egg, 1 heaping tablespoon of lard and butter mixed, ginger, cinnamon and salt to taste. Flour enough to make a stiff batter. One teaspoon baking soda put in cup of hot water and poured into mixture the last thing.

CHRYSTEMESSE BELLS.

Two sorrie thynges there be—
Aye three;
A neste from which ye fledgelings have been taken,
A lambe forsaken.
A redde leafe from ye wilde rose rudely shaken.

Of glad thynges there be more—
Aye four;
A larke above ye old neste blithely singing,
A wilde rose clinging
In safety to a rock, a shepherd bringing
A lambe found in his arms, and
Chrystemesse bells a-ringing.
—Exchange.

THE DECORATION FOR CHRISTMAS DINNER.

The tablecloth is pure white linen, napkins the same. At each of the corners put a sprig of holly with its scarlet berries. At the stem is tied a bow of scarlet satin ribbon, with ends eight inches long; this ribbon is two inches wide and the same shade as the berries. Pin it at the bow to the cloth at the corners of the table. The center piece is oval, twenty-two inches long, seventeen wide. This is made of white sheet wadding, the glazed side up. Around the edge of this is a border three inches wide, of holly leaves thickly dotted with the berries. Sew this on with fine thread. Over the surface of the wadding strew small clusters of the berries. In the center of this piece is a tall glass vase filled with red roses. Around the stem of the vase is tied a lot of half-inch satin ribbon of the same shade as the berries. To this are sewed twelve pieces of the same ribbon, each piece being seven inches long, these pieces are fastened to the wadding, equal distances apart, like the spokes of a wheel. At the end of each piece where it is fastened to the wadding is a small bow of the ribbon.

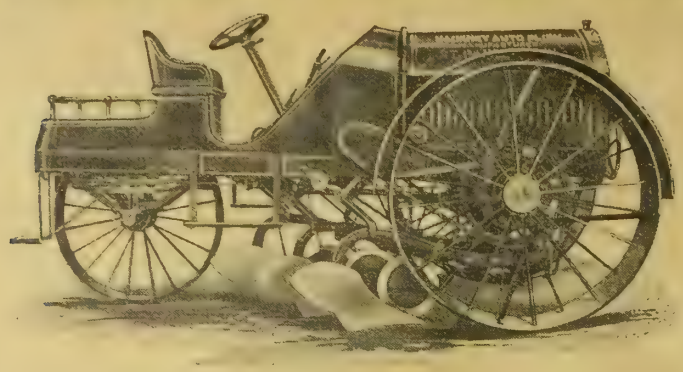
At each plate is a small card made of celluloid and satin. Cut a piece of transparent celluloid four and a half inches long, three wide; on one side of this paint a sprig of holly, having five leaves and three clusters of scarlet berries. Cut a piece of heavy red satin, same shade as the berries, half an inch large, all around to the depth of half an inch. On the right side of the satin paint "Merry Christmas, 1900," in gold fancy letters and figures. Put the satin and celluloid pieces together, the painted sides out, and fasten at each corner with a couple of stitches of red silk. On the celluloid side fasten tiny bows made of red baby ribbon. The fringe of the satin back forms a border for the card.

The dining room is prettily dressed with clusters and festoons of holly. The sideboard scarf is plain white linen, hemstitched all around, and has a three-inch wide border of holly leaves and berries on each end; the border of leaves and berries is sewed on with fine thread. Over the sideboard is a star of holly leaves. In the center of this is a large cluster of the scarlet berries, and on each point at the very end is a small cluster of the berries.—Ex.

Much food is in the tillage of the poor, but there is that is destroyed for want of judgment.—Prov. 13:23.

If vain our toil,
We ought to blame the culture, not the soil.
—Pope.

HACKNEY AUTO-PLOW



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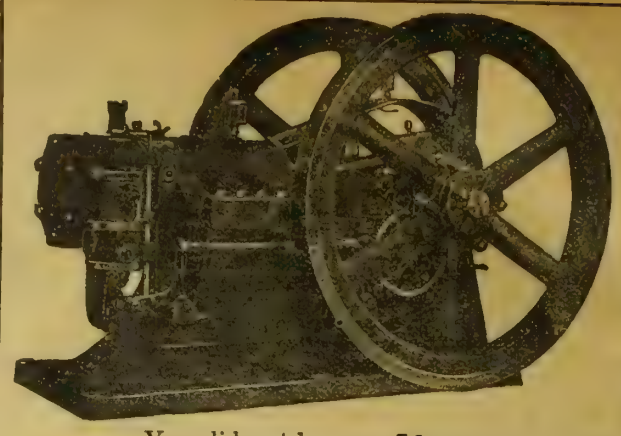

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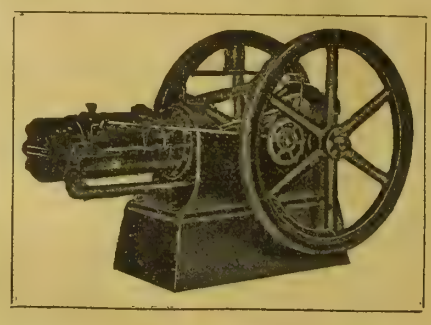

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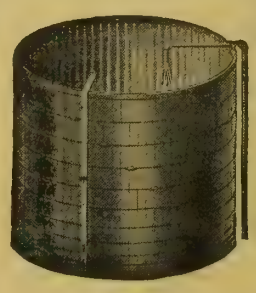

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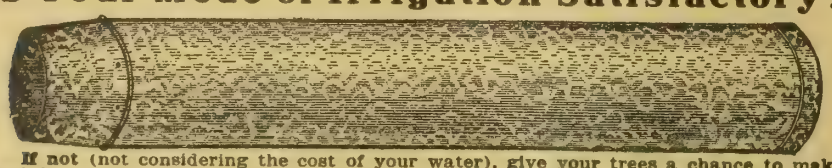

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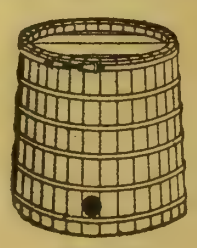

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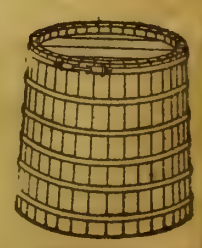

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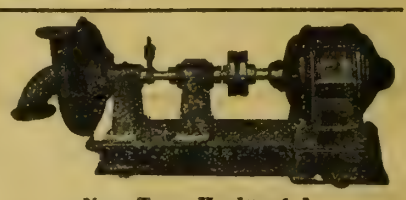
Does It Not Seem Reasonable

To Assume That a Company



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which has been manufacturing one line of goods for over thirty years must be in a better position to furnish superior goods than one which has been in business a few months or years? The old concern has experienced engineers, superior shop facilities and, above all, a reputation and standing to maintain.

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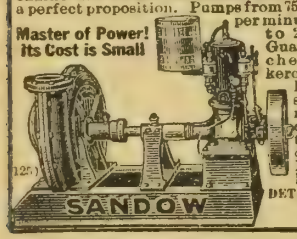

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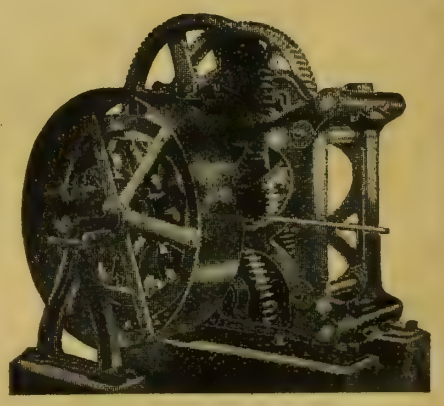
Know the Pomona Deep-Well Pump before you buy.



This cut is a side-view of the New Pomona Pump showing friction pulley and out-board bearing

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California Cultivator

Vol. XXXVII. No. 26. LOS ANGELES: THURSDAY, DECEMBER 28, 1911 One Dollar the Year

Date Culture in California

By Dr. J. Eliot Coit. Pomologist, California Experiment Station

For the last two years small quantities of California grown dates have appeared on the market and on account of their very fine quality and the neat and cleanly appearance of the package, they have commanded prices greatly in advance of imported dates. The question as to whether the high-priced Deglet Noor date can be produced commercially in California may now be answered in the affirmative. As a result of the stimulation of interest in dates and date culture, a large number of people are today seeking information in regard to various phases of the business. Until the last year or two dates have been grown only in an experimental way, but the success of some of these small test orchards presages a large expansion in the near future.

Where Dates May Be Grown.

While date trees can be grown as ornamentals wherever the orange is grown, they will not properly mature fruit in any except the hottest and driest portions of the state. Perhaps a small quantity of very early soft dates may be matured in the hottest parts of the San Joaquin and Sacramento Valleys. The best quality dates, however, are limited to the southeastern corner of the state where the thermometer may be expected to range above 100 degrees almost daily for five months of the year and where the moisture content of the air is very low during the season of the date harvest. While it requires a very large total number of heat units to properly ripen dates, the trees are fairly resistant to frost. Date palms may be expected to endure on frosty nights a temperature of 20 degrees for a short time without serious injury. Another very important requirement is dry air at harvest time, for should a rainy spell occur just as the dates are ripening they are very apt to ferment and decay on the trees.

The date palm is not a typical desert plant, however, for while its head must be in the burning sky its roots must be well supplied with water. It cannot survive on a desert without water and considerable quantities of water are required to make the date a profitable tree. It is estimated that water equivalent to one miner's inch continuous flow for each five acres would maintain a bearing date orchard. All of the requisite conditions may be found in many places throughout the Imperial, Coachella and Colorado Valleys and the country around Palo Verde and Blythe, Riverside County. At other places in the state, such as the vicinity of Riverside, Redlands, Fresno and Oroville, early dates might be grown in a small way for home consumption and even placed on local markets to be sold in the fresh uncured condition. The Coachella, Imperial and Colorado Valleys are, however, the regions where date culture is destined to assume commercial proportions.

As to type of soil the date palm is not very particular. A very stiff adobe is not desirable, neither is a light sand which is low in plant food. Any kind of loam soil which is easy to work is suitable. One of the most striking characteristics of the date palm is its great resistance to alkali. It will grow and flourish on soils far too salty to produce alfalfa, grapes or a number of field crops. It is therefore especially suitable for the reclamation of white alkali lands which may be bought very cheaply. On very strong alkali it is difficult to raise seedlings, and offshoots may require some fresh soil well mulched with straw in which to take root. Once started, however, the tree will thrive under such conditions.

Typical Six Year Old Deglet Noor Tree Carrying Two Offshoots. TwoNewly Transplanted Offshoots May Be Seen in Background. Most of the Fruit Was Gone When Photo Was Taken. Indio.

Kinds of Dates.

The date palm like most deciduous fruit will not reproduce itself true to variety from seed. Seedlings vary greatly in character of foliage, precocity, fruitfulness, color, shape, size, season of fruit, and other characteristics. The only possible way to propagate varieties is by transplanting the offshoots or suckers taken from the base of the young trees. Standard African varieties such as Deglet Noor and Fard are simply extra good chance seedlings which were discovered, named, described and propagated in Africa many years ago. The U. S. Department of Agriculture has been collecting varieties of Old World palms for ten years, and upwards of 200 varieties of offshoots have been planted in the co-operative test garden at Tempe, Arizona. This large list of varieties may be classified according as the fruit is soft, medium or hard. The dates ordinarily sold in bulk by California grocers are the Halawi variety produced in Mesopotamia. The small dark-colored dates sold by grocers are the Fard grown in the Semail Valley near the Persian Gulf. Practically none of the dry or Arabian bread dates have been placed on American markets and they are therefore unknown to the American consumer. They are perfectly dry and may be handled like peanuts. They are filled with sugar and have a rich, nutty flavor. Offshoots of a number of different kinds of dry dates were imported and are now fruiting abundantly in California. These probably will sell at a smaller price than the soft dates, but on the other hand the loss from fermentation is practically nothing and the expense of harvesting and packing is very small. Some seedlings are intermediate between the soft and hard types.

The varieties may also be classified according to whether the sugar they contain is cane sugar or grape sugar. Cane sugar dates are much sweeter and not nearly so sticky; neither do they cloy the palate as do the grape sugar dates. The Halawi is a good example of the sticky grape sugar type, while the Deglet Noor belongs to the cane sugar class. The grape sugar dates greatly outnumber the more desirable cane sugar varieties.

Of the two hundred or more varieties under test, a large number have have shown themselves to be but poorly suited to American conditions. Some have not fruited as yet, but perhaps twenty-five varieties will prove quite successful. After making a personal study of the fruit at the Tempe test farm for two years I consider the following among the most desirable for California planting. Soft dates: Deglet Noor, Itima, Bent Kebala, Tadala and Maktum. Dry dates: Thuree, M'Kentichi Degla and other varieties will come to the front. Horra. A very fine quality soft date suitable for local use but doubtful for shipping and a shy bearer is the Rhars. As the tests continue no doubt

Planting Offshoots in Orchard Form.

As a rule only young palms bear offshoots, the growth of trees over eight or ten years old being limited to the one terminal bud. Most young palms will produce from five to fifteen offshoots which are cut away from the mother palm and transplanted as fast as they reach the proper size, which is from five to fifteen pounds with the leaves trimmed off. April and May are the best months to transplant. The offshoot should be set to the depth of its greatest diameter, with the central bud somewhat above the irrigating water level. A shallow basin around the plant filled with straw facilitates irrigation and prevents the rise of alkali until the roots have taken hold of the soil. It is very important that the soil be kept constantly wet by frequent irrigations. The palms should be set not less than 30x30 feet and 30x36 feet is preferable, at which distance forty offshoots would be required for an acre. The subsequent culture is very simple. Frequent irrigations with an occasional cultivation to keep the weeds down and the surface of the ground loose is sufficient.

The Sex of the Date Palm.

The date palm belongs to that class of trees which bear male and female blossoms on separate plants. Somewhat more than 50 per cent of the seedlings will turn out to be male palms. In a state of nature this proportion of males will so fill the air with pollen that artificial pollination is unnecessary. In commercial plantings, however, it economizes space to limit the proportion of males to females to about one to twenty or thirty and resort to artificial pollination. The process of pollination consists in cutting the large bunches of male bloom and dividing them into small strands. One or two strands when tied over the female bloom is sufficient to pollinate an entire bunch. This work may be performed very rapidly and cheaply provided a sufficient number of male palms which bloom at the right time are near at hand. The date ovary is three-celled, but one fruited by abortion. If the blossoms are not pollinated, there will be produced a large bunch of small seedless, worthless dates borne in clusters of threes. These seldom ripen and usually simply hang on till the winter cold and rain brings about their decay. It is not uncommon for city newspaper reporters to mistake these unpollinated dates for some new thing of value and indulge in scarehead articles about the wonderful possibilities of the newly discovered seedless date. A male seedling which is found to produce a very large quantity of good pollen is valuable and should be propagated by offshoots, these to replace the more inferior males. For very late blooming female varieties it is practicable to preserve

(Continued on Page 680.)

Citrus Trees

First Quality Trees
will be Scarce in 1912

A block of 20,000, one year old buds. First Quality Trees. Free from scale— (no scrubbing) *mostly* ⅝ *and up now*

THE MAN WHO WAITS is generally the disappointed man.
BUY NOW, WHILE THE GOOD STOCK IS AVAILABLE. It will cost you no more and probably less than if you wait until Spring.
THE BEST ARE CHEAPEST. First-class groves have never been made out of sickly seedling trees. That few cents per tree saved at time of purchase often shows dollars per tree loss in after years.
BUY THE BEST; IT PAYS. We have got a limited number of trees to offer for the season of 1912—

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Ninety per cent of our trees are strictly first-class, strong, one-year-old buds, the majority of which will measure ⅝ inch and up now on sour stock roots. True to Name, and the buds of which were carefully selected from the best fruiting trees. They have been carefully grown, are straight and entirely free from scale (no scrubbing). We invite inspection and solicit correspondence.
We will sell these trees at current prices. Expenses refunded to out-of-town purchasers. Twenty years' experience in expert citrus horticultural work.

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Valencia Orange
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Eureka Lemon Trees
on sour stock root.

Grown without fertilizers, hardy and free from scale.
Eucalyptus in large or small quantities.

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Citrus Trees

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For 1912
9000 Late Valencias **5000 Washington Navels**
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The trees are yearling buds on Florida Sour Stock, of thrifty growth and free from scale.
O. HANDY, **Phone 33 Y** **2 1-2 Miles N. E. of Plaza**
ORANGE, CALIFORNIA.

Orange and Lemon Trees
Fifty Thousand High Grade Trees
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CITRUS TREES

Navels, Valencias, Eureka Lemon, Grape Fruit and Tangerine 1 and 2 Year Buds. Sour Orange Seed-Bed Trees, 1 year.
We are offering a large stock for season of 1912. Our trees are equal to the best. Write us.

C. H. DISBROW, Propr **SOUTHLAND NURSERIES** **R. F. D. No. 1, Pasadena, Cal**

Citrus and Tropical Fruits

THE SEEDLESS LEMON.

By Dr. F. Franceschi.

That this variety cannot be called a novelty is shown by the fact that it was registered and described in the classical work on Citrus Fruits by Risso, nearly one hundred years ago. At that time it appeared to be well known in Italy, in Southern France and in Spain, although its original birth place is not given in said work.

Here is the translation of the description by Risso, which I believe well worth reproducing for comparison with the trees which were recently announced from San Bernardino and from Santa Cruz, California. "A very distinct variety, not only for its seedless fruits, but also for the following characteristics: 'Stem rather weak and thin, very smooth, branches also not much vigorous and armed with small spines; leaves ovate oblong, thin, pale yellowish green, denticulate, on short petioles with heart-shaped wings; flowers small, petals 4 to 5, purple on the outside, stamens shorter than the pistil; fruits of medium size, ovoidal, smooth, greenish yellow; skin very thin; pulp acidulous, in 7 to 9 partitions, absolutely seedless."

For some unaccountable reason it appears that this variety did not gain much popularity in Europe since the time of Risso; at least it is not offered in the trade at present and no mention of it is made in any of the catalogues which I was able to consult, except one issued in Algiers in 1889, where it is given as originated at Valencia in Spain.

Whether our California trees are really identical with that described by Risso, it remains to be seen. If they were, I doubt much that our Eureka orchards are going to be budded to seedless in the near future.

THE SEEDLESS LEMON.

By G. W. Waterbury.

The seedless lemon is now a reality and another article of fruit has been added to the California list of seedless. The orange, the pomelo, the apple and now lemons can be produced and reproduced without seeds. What has been possible with these will undoubtedly be true of other varieties in the future. Sports will be produced from time to time which will form parent stocks for old varieties of fruit under new and better conditions.

In quest of the seedless lemon I visited Rialto, in company with Mr. W. C. McCully, manager of Mr. Flagler's ranch in Corona, last week. At Rialto we picked up Mr. H. C. Livingston, an authority on both Florida and California citrus stock, and drove to the citrus ranch of Mr. Henry Meyers. Mr. Meyers owns ten acres of oranges, along one side of which are 14 lemon trees planted over ten years ago.

Of the lemon trees 13 were of the new seedless variety and one Lisbon. The trees had not been pruned and on account of their proximity to the road had not received proper cultivation. Nevertheless, under such unfavorable conditions, the seedless trees had produced over five boxes to the tree a year and the physical condition of the tree was fairly creditable.

Mr. Meyers told me the stock originally came from San Diego County and was purchased as citron. Three orchardists received plantings: Mr. John Morris, Mr. W. A. Meyers and Mr. Henry Meyers. Repeated cuttings from different trees failed to show seeds. The fruit was full of juice, but the rind a little thick and a trifle coarse on the outside. The inner portion of the rind was of a little more pulpy appearance than in the seeded lemons.

The condition of the rind I attributed to the poor cultural conditions under which the trees had grown. Mr. Livingston stated that none of the Sicilian lemon stock he had received and handled while in Florida had ever been seedless and did not believe the parent stock had been propagated there. Both he and Mr. McCully believed the tree would do well in Southern California.

Later, in company with Mr. Martin of Rialto, we visited another grove planted to both oranges and lemons of mixed varieties. Here I found a number of seedless trees, growing under much better conditions and showing highly satisfactory results. The tree is thornless, a good bearer, carries more wood than the Eureka and hangs well to the ground. In spite of its uncertain parentage it bids well to become one of the best of our lemon varieties; perhaps the best. Who knows?

THE SEEDLESS LEMON.

In the issue of November 30th we referred to lemons left at this office by Mr. C. H. Brown, making some comment as to their seedlessness. One point we made was that a Eureka lemon grown on a tree in thrifty condition and "picked entirely green is usually seedless or contains only unmatured or partially formed seeds." This was a point we had raised once before with Dr. J. Eliot Coit and he stated that it was a claim unknown to him. We will say, however, that it has been the belief of many who have had to do with the picking of lemons, but now after some weeks of observation, Dr. Coit writes us as follows:

"Some months ago in answering an inquiry in the Cultivator you took the position that one of the factors, perhaps the chief factor, influencing formation of seeds in lemons was the age at which the lemon was picked from the tree. You later stated to me in your office that it was your impression gained from general experience in the packing house that lemons picked green and ripened in the house were mostly seedless, while lemons permitted to ripen on the tree and fully mature before being picked were sure to be a 'seedy lot.' At the time, I questioned this, and I have taken occasion recently to cut and compare the seed content of quite green immature lemons with yellow tree-ripes. I find that there is practically no difference; what slight difference there is, is in favor of the green lemons for the most seeds. It may be true (I hope to prove this point later) that the time from blossom to coloring of seedless lemons is less than the corresponding time with seedy lemons."

We may add further that the lemons sent in by Mr. Brown were submitted to Mr. Roeding, and while he commended highly the quality of the fruit, said the shape would prevent it from grading as high-class. There were two varieties; one named unequivocally the sweet lime. Mr. Roed-

ing also brought into the office specimens of the Bearss, a seedless lemon which originated in Porterville eleven years ago. This is remarkably fine in quality, but like the others spoken of, too round or orange shaped. The sweet seedless lime was also a fine fruit, but very small. Both fruits are being propagated at the Roeding and Wood Nurseries near Whittier. While the seedless lemon has much in its favor, it is doubtful if the Eureka or its more seedy brother, the Lisbon, will ever be entirely replaced.

TO DEMONSTRATE FRUIT HANDLING.

The Florida Citrus Exchange was represented in the state argicultural demonstration train which left Palatka for a tour of Florida Nov. 16 by a special car. In this car were displayed various sizes and grades of oranges and grapefruits and all the paraphernalia necessary to the proper picking, packing and handling of the product.

The Coast Line is furnishing the equipment for this train. The car which is used by the Exchange was loaded by expert fruit packers. It made the southern trip with the train and will then return as far north as Ocala.

Exchange Manager Temple believes that much good will be done through the Exchange exhibit. Large views of interiors of packing houses in Florida are at hand and will be on display in the car. These will show good, bad and indifferent packing houses. Also will be shown white fly fruit, washed and unwashed, and the difference existing in fruit that has been washed properly and that which has not been washed at all or half washed.

Oranges secured from the Florence Villa, Winter Park, Tavarese and Tampa packing houses will be shown. The grapefruit display came from Manatee County, Florence Villa and Miami. Grading methods employed by the Indian River Association at Mims and at South Lake Apopka were shown.

At one end of the car boxes will be loaded and stripped to demonstrate the proper method of loading and stripping boxes in cars. The Exchange has received a great many inquiries from small associations and small shippers asking for information as to the proper manner of loading and stripping.

Samples of gloves used in picking, grading and packing, picking baskets, field boxes and the kind of springs used on wagons in conveying fruit are shown. Incidentally, the Exchange stipulates that all fruit for it must be handled by wagons having springs. Through this provision much unnecessary jolting and jarring of fruit is prevented.

An expert packer is to accompany the car, and he will be in charge of all demonstrations. Thomas B. Quinby, of the Exchange, will be on hand as a general encyclopedia of information, and will be prepared to answer any question presented.—Florida Grower.

OLIVES IN SANTA BARBARA.

Regarding the olive output in Santa Barbara County Commissioner Beers reports:

"The crop is coming somewhat later than last season, but the first are being gathered and the outlook is for an average crop of good sized olives. Prices are stiff, quite a bit better than a year ago, with a good demand. The use of the processed olive in the home is constantly growing and this office is receiving calls for the processing formula from those who are making their first attempt at curing the fruit. The acreage is constantly being extended and the industry seems to be on a firm footing."

CLEAN UP NURSERY STOCK.

State Horticultural Commissioner Cook is sending the following letter to the nurserymen of the state:

"For some time the state commissioner of horticulture has realized that many of the nurseries scattered throughout the state are affected to a greater or less degree with injurious insects and plant diseases. Such conditions ought not to exist in this, the foremost horticultural state of the Union, and it is the intention of the state commission of horticulture to aid in correcting these conditions as far as possible.

"As the law now stands, there is practically no difference between the treatment of pests already established in the state and those not so established. Both classes of pests are alike inimical to the horticultural interests, and both alike ought to be extirpated. In the matter of the enforcement of the law, the ultimate interests of both the grower and the nurseryman are the same. Under the law, it is the duty of the state commissioner of horticulture, who is also the state quarantine officer, and the quarantine guardians, of whom there is one in each county, to declare and enforce a rigid quarantine on any infested orchard or nursery.

"With the quarantine order in force against it, a nursery would be absolutely powerless to move any of its stock. The state commissioner does not desire to be forced to bring about this condition in any nursery, but unless the infested nurseries are made clean, he will have no other course of action."

PACKING ORANGES IN PALESTINE

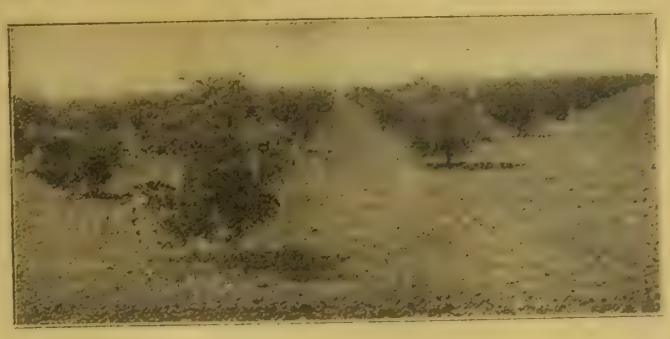
By Consular Agent Jacob Hardegg, Jaffa.

The boxes used in the orange trade at Jaffa are 68 centimeters (26.77 inches) long, 32 centimeters (12.6 inches) wide, and 27 centimeters (10.63 inches) deep. One partition is used. The thickness of the ends and the partition is 16 millimeters (0.63 inch); thickness of sides, 7 millimeters (0.315 inch); thickness of tops and bottoms, 7 millimeters (0.276 inch). The empty case weighs 4½ kilos (9.9 pounds), and the contents 33 kilos (72.75 pounds), the total weight of the packed case being 37½ kilos (83.65 pounds). The weight of the contents probably varies slightly.

The cost of the wood used in the box making, c. i. f. Jaffa, is as follows: Ends (16 millimeters thick), 60 francs ($11.58) per cubic meter (35.316 cubic feet); sides (8 millimeters thick), 80 francs ($15.44) per cubic meter; tops and bottoms (7 millimeetrs thick), 70 francs ($13.51) per cubic meter. The lumber is imported chiefly from Austria and Roumania.

Some dealers import the wood ready sawed to the sizes required, the prices being the same as unsawed. Most of the dealers, however, prefer to have the sawing done locally, as when the wood is imported ready sawed they state they suffer loss from damages and theft. The charge for sawing wood to sizes required is 10 francs ($1.93) per cubic meter at Jaffa. As a rule, dealers have their boxes made by local workmen, the cost ranging from 60 to 70 francs ($11.58 to $13.51) per 1,000 boxes. The shipments from Jaffa last year amounted to about 1,000,000 cases of oranges.

J. W. Jeffery, at the head of the new Deciduous Fruit League, is calling meetings in various parts of the valley. It is to be hoped that the deciduous people will make this organization exceptionally strong.



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The Law and the County Commissioner

By H. P. Stabler, Horticultural Commissioner Sutter County, Before the State Fruit Growers Convention

Enforce the law. If the law is a good one there is no reason for its non-enforcement. If it is a poor law, or ineffective, its enforcement will soon disclose its weak features and it can be supplanted with better legislative enactment. A good law not enforced accomplishes nothing. As all county horticultural commissioners are now under bonds to properly perform their duties what excuse can be given for not enforcing the law?

Better for All.

Strict enforcement of the horticultural quarantine laws of the state is better for the fruit grower, better for the nurseryman and better for the consumer. It is better for the grower because it simply requires him to eradicate the pests and diseases, which if allowed to continue on their wayward course, would ultimately ruin his property. It is better for the nurseryman, because it requires him to sell clean stock, which saves him the expense of disinfection or rejection at the point of destination. It is better for the consumer, because it makes it possible for him to buy clean fruit, which increases consumption.

If the foregoing is true, and I maintain that it is, why is there any question about the advisability of enforcing the law? In the first place, the lot of the county horticultural commissioner is a hard one. He not only has to fight the pests, but too often the grower and nurseryman whom he is trying to help. In too many instances we find growers careless, prejudiced and ignorant, while the consumer is indifferent, and we all realize the stubbornness of some nurserymen. Again we find county commissioners who are peace-loving and believers in the doctrine of moral suasion, missionary work, and publicity. While these means of accomplishment are not to be entirely disregarded they cannot be depended on to eradicate pests and diseases. They are effective only when accompanied by a final enforcement of the law.

Moral Suasion—Nit.

The writer tried moral suasion, missionary work and demonstration in the Sacramento Valley in 1904. Prof. Pierce was notified and sent directions for its control. This was published in the local papers and bulletins distributed among the pear and apple growers. Some work was done. The next year Prof. Waite of Washington and Prof. Smith of the University demonstrated, with their assistants, a successful means of pear blight eradication. We published their method as a bulletin and it was widely distributed. One of Prof. Smith's assistants was employed as an inspector and demonstrated pear blight work to growers. Personal solicitations and entreaty followed. Some growers did the work properly and secured results. Others did it in a careless way, or neglected it, and the result is that we still have some pear blight in Sutter County. It is the intetion of the commission to enforce the law in Sutter County this season. Remember, this work was carried on in an important pear and apple growing district.

Legal Suasion Works.

Contrast the manner of handling the outbreak of the white fly in Marysville. In the spring of 1907 the Aleyrodes citri was discovered in Marysville, a city not in a citrus district, and in the door yards of people who were not growing oranges commercially. Moral suasion was invoked and resulted in some denudation. Missionary work was tried followed by more denudation. Even demonstration failed to convince the owners of orange trees of the importance of the work in hand. As a last resort it was decided that the law should be strictly enforced. Legal notices were regularly served and more trees were treated, but still some owners persisted in their do-nothing policy. A suit was brought, and the commissioner was not only upheld, but the decision of the court was so sweeping that every tree was immediately denuded of foliage. The result was that A. citri was absolutely controlled in Marysville. If here have been two or three suspicious cases since, no one has objected to the enforcement of the law. How much better to follow this method than to worry along for several years under moral suasion to find in the end that enough growers have been careless and the pest or disease has been spread to other districts.

"Please" Won't—"Must" Will.

Other public officials do not depend on moral suasion and missionary work. Let me cite the county tax collector. What percentage of the public funds could he collect if he simply asked the taxpayer to please pay his taxes? He might say, "Mr. Jones, the county really needs the money, and I have been appointed by the people to attend to this matter. The law requires it, and I am under bonds to do my duty." Mr. Jones might reply, "I don't know whether I will pay my taxes or not. I hear so much about this every year I am tired of it. I don't believe in taxes anyway." But the tax gatherer simply enforces the law. Mr. Jones expects nothing else, with the result that the delinquents are very few. Even they are provided for and their taxes are paid and the state takes a lien on the property.

All of which goes to prove that the county commissioner is justified in strictly enforcing the law. The grower will soon learn that there is nothing else to do but clean up, and he will do it, or it will be done for him and he will pay for it. The nurseryman will learn that he can only ship clean stock and he will do it. The consumer will learn that all fruit offered for sale is clean and he will buy more of it.

Discretionary power is given the commissioner, but not the grower. The time has passed when a fruit grower, nurseryman or any one else can conduct his business in a manner injurious to others. When he deems it necessary the commissioner can cause an inspection of orchard, nursery or other place to be made and he can compel an attempt at least to be made to eradicate pests and diseases. Why not do it?

LOW HEADED TREES.

During these days when some advancement is being made in our orchards along more scientific lines, one often hears arguments against some of the things proposed and practiced by some of our best orchardists. One of these is against the low heading of fruit trees.

By a high headed tree we mean one whose branches come out of the main trunk four or five feet above the ground, or, as the writer heard one man say, "high enough so that you can get a horse close to the tree in cultivating." By low headed trees we mean trees headed near the ground, depending somewhat upon the variety. Peaches in one of our best growing peach sections are headed practically at the ground, while apples are headed from twelve to eighteen inches above. It is, of course, possible to allow the fruit bearing wood on what was at first a low headed tree to be several feet from the original head, but with proper pruning from the start this trouble can be easily overcome.

An apple tree that is headed high is, in some respects for practical purposes, anything but high; for example, the chances are that such a tree will have the lower branches, at least, growing at almost right angles to the trunk, or, in other words, in a horizontal position. When such a tree is bearing a heavy load of fruit, these limbs will break down and are very likely to break unless props are used. The use of props in an orchard is at best a sign of very poor orchard management in the past, and should be avoided. It is possible to train the high headed trees so that the branches will have more of an upward growth, but it is a recognized fact that work done several feet from the ground is never as satisfactory as when done from a short ladder or while standing on the ground.

In a low headed, well trained and pruned tree we have all the essentials for a profitable one, other things being right. We have a tree that is easily managed in regard to pruning, spraying, thinning and packing. Good labor for doing these things is always at a premium, and it goes without saying that the amount of time it takes for such an orchard is less than for a high headed one. In the second place, it is a well known fact that low headed trees are far less subject to sun scald than high headed ones.—Farmers Review.

APPLES AS MEDICINE.

Economically the apple is composed of fiber, albumen, sugar, gum, malic acid, gallic acid, lime and much water. Furthermore, the German analysts say that the apple contains a larger percentage of phosphorus than any other fruit or vegetable, says a physician. The phosphorus is admirably adapted for renewing the essential nervous matter, lecithin of the brain and spinal cord.

For people of sedentary habits, whose livers are sluggish in action, the acids of the apple serve to elimin ate from the body noxious matters which, if retained, would make the brain heavy and dull, or bring about jaundice or skin eruptions and other allied troubles. Some such an experience must have led to our custom of taking apple sauce with roast pork, rich goose and like dishes.

The malic acid of ripe apples, either raw or cooked, will neutralize any excess of chalky matter engendered by eating too much meat. It is also a fact that such fresh fruits as the apple, the pear and the plum, when taken ripe and without sugar, diminish acidity in the stomach rather than provoke it. Their vegetable salts and juices are converted into alkaline carbonates, which tend to counteract acidity.

MORNING GLORY.

A writer in the Healdsburg Enterprise, Mr. J. M. Alexander, does not seem to be influenced by the usual Christmas spirit which pervades the earth, and thus expresses himself regarding one of the plants of the earth put here to test man's grace. He says:

"For the small leaf morning glory more- drastic measures will be re required. The roots of this dwarf plant usually extend entirely through the earth and are fastened on the other side with a nut, which of necessity has to be unscrewed and removed before the plant roots can be drawn to the surface. These roots reach out in a network of many thousands, and are easily recognized by their innumerable 'adventitious' buds. The buds should be destroyed. Then unscrew the nut and draw the roots through the earth and bury them in a bed of quicklime. By this means a small plot of morning glory may be retarded in its growth during a single generation. This method is not guaranteed, for life is too short and 'dust to dust' was not spoken of the morning glory."

The Farmers Co-operative Produce Association of Wilcox, Arizona, recently met and elected officers for the coming year, and planned for the making of exhibits of Arizona's products.

MISTAKES IN DISTANCE.

Scattered all over the country are thousands of orchards that have been planted too closely and what they need is thinning out to give room in the air for the foliage and room in the soil for the roots. Hard as it may seem to deliberately cut out half the trees in a bearing orchard it is often the most sensible thing to do. Indeed it is often the rankest folly not to do it, for to allow all the trees to be injured is certainly folly and to save a part is wisdom. The net return is the thing to look at, more good fruit can be grown on a small number of trees that have a good chance and pay better than a larger amount of all poor fruit. And there are many orchard trees that have been set too far apart, say thirty feet, for profitable occupation of the ground for the first ten or fifteen years and after that they are too close. This is a most common dilemma and there is almost no economical and practical remedy, especially if the trees were set by any but the simple, square method. Removing each alternate diagonal row will remedy the evil.—Van Deman in Green's Fruit Grower.

Nitrate of soda can be used with benefit on all crops. It is immediately available and should therefore be only employed in connection with plants in an active stage of growth.

There is far too little mulching done. Small fruits, trees and garden crops are given a most favorable opportunity for attaining the highest perfection and development when their roots are covered with a thick mat of leaves, hay or other suitable material.

A good mulch keeps down weeds, and renders the soil loose, moist and porous at all times, and that, too, with little labor of cultivation.

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Okanogan, Washington, has a new cooperative creamery.

The Ornamental Garden

SOME POINTS ON FIELD-GROWN ROSES.

By John Gill, West Berkeley.
Read at the Convention of California Nurserymen, Los Angeles, Nov. 23. 1911.

The cultivation of field grown roses in California has assumed very large proportions within the past few years. This refers not only to plants grown o their own roots but to budded stock as well, and it is only within a comparatively short time that the latter sort has become so popular that many hundreds of acres are devoted to it. Many roses are of very satisfactory growth when raised on their own roots. By this statement it is meant that they root easily, grow strongly and transplant readily. These are ideal conditions when they exist and are the only things to be considered if we would make a success handling stock after this method. Unfortunately, a majority of our best sorts only fill one or two of these essentials, and unless all points correspond the effort with that particular variety can not be deemed a good risk.

Some roses root readily, but the quality of the roots is not such that they are to be recommended for transplanting purposes. This is a serious point and one that has caused great annoyance, and it might be well to qualify here and state that this is controlled largely by the quality of soil, the plan of irrigation pursued, and the amount of cultivation given. Each contention listed here has a direct bearing on all the others, and even under the best possible conditions many kinds will not make sufficient growth of either top or root to make salable plants in a reasonable time. Many pages might be written on any of the phases mentioned here, and as one thought leads to another we will now turn our attention to budded stock.

Planting Stocks.

First of all, let us consider the proper time for planting wild stocks. This is so dependent on climatic conditions for ripening, heeling in when necessary, and lining out, that every location is a law unto itself, and local conditions can not be handled in a general way. Presuming then that the stock is made into cuttings of usual length and caliber of well ripened wood and free from borers or other pests, we will next note the soil. Roses as we all know prefer stiff, heavy loam, with good drainage. An excess of sand means that an excess of water must be used, followed always by an excess of young growth which is not prone to ripen, and an excess of dead roses after transplanting. This is the reason why so many growers have not been successful in the warm, dry parts of California where good stock cannot be grown without lots of water, always followed by the train of disasters just mentioned.

Cultivation.

Cultivation first, last and all the time during the spring and summer is the key to successful rose growing in this state and by no other method has any grower achieved anything except pecuniary loss. When the cuttings, climate and soil are right, we may next devote our attention to the planting. Always place the stocks deeply in the ground and see that the soil is packed around them firmly. Commence cultivating thoroughly as soon as the weather permits.

Choice of Stocks.

As to the choice of stocks there is quite a diversity of opinion in what should be used for the various sorts to be worked on them. Many varieties absolutely refuse to make a union with certain wild roses. Others make a half-hearted connection, and wait patiently for a good wind-storm when they may sever their irksome bonds. Some are very discriminating in one locality and not in another. Others work well on several sorts, and some apparently will not grow on anything. So on down the line, a constant study with the end always in view of finding out what is best for your particular purpose. It will be seen from this that to make a success in this division of rose growing many particulars must be kept constantly in mind, and eternal vigilance your watchword.

Budding.

After the stocks are planted and growing strongly the budding season comes around. This is another important season. The cutting of buds must be done with great care and precision and woe to the grower who relaxes his vigilance at this time. Careless help has driven many a nurseryman to distraction when he deserved a better fate. The selection of varieties and the quantity of each to be worked is another perplexing problem. The fickle public changes its wants often and without notice. The sort that is popular this season can't be given away next year, and vice versa. We are supposed to know all of this ahead of time and act accordingly. There are quite a number of so-called standard varieties for which there is always call in limited or fair quantity, but with the bulk of the different kinds it is sometimes a gamble.

About budding itself there is little to argue on, but about the mistakes made after the bud has been inserted a book might be written. Presuming that the scions are properly cut and handled and the choice of tying material right, we must pay attention to the man who ties the strings. Too many wrap too loose. Wrapping or carelessness in making a knot ruins many thousands of good material yearly. Then the growing of the stocks must not be allowed to stop. Too much stress cannot be laid on this point, whether the young stocks are to be encouraged by artificial means to shoot out quickly or not. Then the effect of a possible cold snap or a heavy wind storm taken into consideration and the young wood pruned accordingly. These two latter conditions cannot be entirely forestalled, and he is indeed lucky who does not lose a goodly portion of his crop occasionally by some of these happenings. But barring accidents and under usual conditions the buds are ready for inspection in a few weeks after budding. If all points are right there should be no failure greater than one per cent, and this has been our record for many years. Occasionally we get poor scions of some new variety from a distance and the loss is much heavier.

General Hints.

In topping the stocks the rose grower has another good chance to distinguish himself. Whether to do it early or wait until later is often an enigma, and if one was always sure of the weather, much extra work could be avoided and less danger from wind and rain. Heavily irrigated roses show little inclination to become dormant, and when dug in the fall and covered with young foliage, are in anything but satisfactory condition for transplanting. On the other hand when there has been no irrigation and the stock allowed to dry off naturally, there is no difficulty in digging, no danger of heating during transit, no drying back when replanted, and no kick from the purchaser.

Another point should be mentioned here. Non-irrigated roses can be dug with perfect safety as early as October and from that time on there is no difficulty in handling them until the first of April. This gives the grower a splendid chance to dispose of his stock at such times as best please his customers in the many parts of the country. Digging when possible should always be done with a treedigger, as the public have become quite as particular in the matter of roots as they always have been with tops.

One might ramble on indefinitely about the varieties of roses, both new and old, and the peculiar conditions favorable to certain kinds and classes, but it is not the intention to go into details along these phases, and in concluding will remind you that the demand for properly grown, fieldgrown, roses was never greater than it is at the present moment in California and although quite a few growers have

(Continued on Page 701.)

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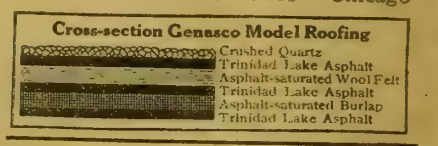

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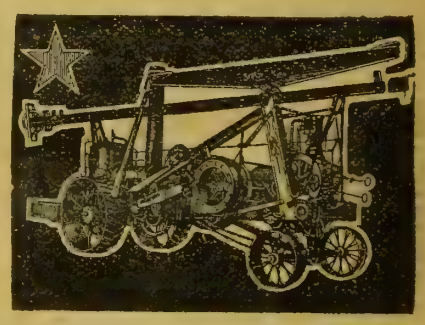

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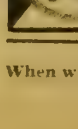

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Small Fruits and Vegetables

GROWING ASPARAGUS.

By Q. A. Lobingier.

Asparagus is grown for the tender young shoots which grow in great numbers from the crowns early in the spring, and many people consider it the best of all early vegetables. It is in demand everywhere, often selling for prices that give a handsome profit to the grower. Notwithstanding large areas in suitable soils and locations, are annually added to the plantations already made, the demand keeps ahead of the supply and asparagus growing is only in its infancy. This article is not intended for the grower who wishes to embark in the business on a large scale, but rather for the small grower who would add something to the list of crops he already grows for market, and especially for the small home owner who would like to have a generous supply for his own table

In any attempt to grow asparagus, keep in mind that you cannot produce a crop in a day nor a year, and that it pays to do everything relating to the work in the most thorough manner. A bed of asparagus properly planted in suitable soil and having good care from year to year, ought to last for twenty years and still be productive. It is a rank feeder and possibly no other plant approaches it in this respect unless it is rhubarb. If therefore you would be successful, plan to plant no larger area than you can fertilize liberally.

Planting in Southern California can be done at any time between January 1 and March 31, the sooner after the first of the year the better. A good, deep, sandy loam is the best soil usually to be chosen outside the delta and alluvial deposits of our rivers, and it should be thoroughly prepared by deep plowing. If one has plenty of land, the rows can be made as much as four feet apart, marking them off with a plow and going twice in a furrow, making it as deep as possible. This will leave several inches of loose soil in the bottom of the furrow on which to set the plants, the crowns of which should be about five inches below the level of the ground. In rows four feet apart the plants can be from twelve to eighteen inches apart in the row. Cover lightly at first, not more than about an inch of soil over the crowns. As they grow, a little soil can be added until the furrows are filled level. Always use plants that are one year old. It is best to grow your own plants, the only objection being that you lose one year's time. The advantage of growing your own, is that it can be cheaply done and you have them right at hand in good condition when you are ready to set them into permanent quarters. And still better is the fact that you can select the strongest and best plants and reject the weak ones. Give the plants thorough clean culture the entire season and never allow them to suffer for water. Allow all foliage to grow until fall when it should be moved and removed from the ground and burned. To get best results asparagus must be fed with manure or commercial fertilizer and it can be applied almost any time. One good way is to open a furrow on each side of the row and after applying the manure in the furrow, turn the soil back with the plow

Where land is limited the rows must be closer together, but twelve inches is as close as the plants can be set in the row. In my own ground I have the rows three feet apart and the plants twelve to fifteen inches in the row. I cover the entire surface of the ground with manure a couple of inches deep three or four times a year and give abundance of water and clean cultivation. Salt is a good fertilizer for asparagus and can be applied any time where irrigation is used, but February or March would be a good time here. The cheaper grades of salt should be used. Kainit, a form of potash salt, is good. In small plantings a spacing of 12x18 inches can be used and by liberal fertilizing a large quantity can be grown from a very small area.

There are doubtless many cases where people would like to have a bed of asparagus for home use but cannot get the ground ready this coming spring. If such persons would buy seed which can usually be bought for about 50 cents per pound, and sow it in rows about fourteen inches apart, in good mellow soil, they would have a good stock of plants by fall and have in the meantime a chance to properly prepare the ground for a permanent bed. Sow the seed thinly; if it could be about two inches apart in the row it would need no thinning. Give plenty of water and good culture. One ounce of seed will produce about 200 plants.

This same suggestion is offered to the person who wishes to grow in a moderate way for market. For all those who can arrange to plant this present season it is best, of course, to buy the plants.

There are a number of varieties and most of them good. Many good gardeners assert that any type will produce good results in quality by giving the requisite care. I have "Dreer's Eclipse" in my garden, and nothing I have ever grown equals it in tenderness and fine flavor. Assuming you have set out plants this coming spring, do not cut any of it the first season. Every effort possible should be made to get a fine root system the first year and to this end get the plant to make all the foliage possible. No foliage, no root growth. Cut very sparingly the second year, that is, for a very limited time, as you can permanently injure your plants by cutting too long a period. The third season the bed will have reached maturity and the cutting should include every stock that puts up, and may continue as long as the market will justify, which is usually from six to eight weeks. If however the stocks begin to diminish or spindle, cutting should cease for that season, as such a condition would be evidence that the vitality of the plant was being exhausted. After ceasing to cut for use, allow all foliage to grow at will until fall, when it should be treated as the previous year. Frequent dressings of hen manure is excellent for asparagus, but care must be had that the quantity must not be too great at any one time. Light dressings and frequent would be safe.

As to marketing asparagus, growers will have to be governed largely by the custom in vogue where they sell. Many localities market it loose in boxes, the buying and selling being altogether by weight. In many places it is always bunched. Whatever the method the grower should make at least two grades so as to get uniformity in size, and if bunched, the stocks in the center should be as large as on the outside.

The best price will always come from the best asparagus offered in attractive, uniform packages, and I want to repeat with emphasis that the best asparagus can only be produced by the most liberal fertilization and cultivation.—Q. A. L.

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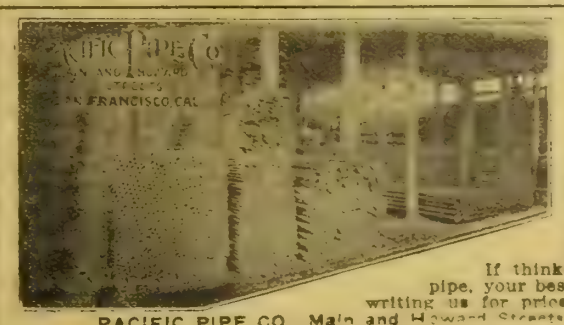

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General Agriculture

HOW NEW ZEALAND PROVIDES LAND AND CAPITAL FOR SETTLERS.

In the early days of the Colony of New Zealand, the land was freely alienated and some large properties were accumulated, but a more careful policy is now pursued in regard to the disposal of the Crown Lands.

While giving every encouragement to settlers, the government restricts the amount of land which they may individually purchase or lease. It provides further, that in the case of leasehold lands, the "unearned increment" in the value of the land shall be reserved to the state. This is effected by giving leases for comparatively short periods, at the end of which they may be renewed at rents determined by revaluation of the land.

The September number of the Bulletin of Economic and Social Intelligence, published by the International Institute of Agriculture, contains an article on "The Administration of the Crown Lands in New Zealand," from which it appears that while a large proportion of the total area of 26,714,265 hectares had been sold or granted in freehold, 7,412,901 hectares were held on lease from the Crown on March 31st, 1910, and there were still 2,538,183 hectares available for colonization.

Ordinary Crown Lands are sold or leased to settlers in a great variety of different ways, but always with restrictions as to the amount of land which each may acquire. In almost all cases, too, the settler is compelled to reside upon the land and to effect improvements up to a specified value. Thus, for instance, a settler who acquires first-class agricultural land on the system of occupation with right to purchase, cannot take more than 259 acres of such land, while he must reside upon the land for six years (or, in certain cases, seven years) and must effect improvements within six years amounting in value to 30 per cent of the value of the land.

A portion of the Crown Lands, amounting to 2,832,697 hectares was set aside in 1907 as a "National Endowment," the revenues derived from which will be devoted to education and the provision of old age pensions. Other lands will be added from time to time until a total of 3,642,039 hectares is reached. The "National Endowment Lands" cannot be sold, but are only given on lease.

With the object of providing for closer settlement, the government has been empowered to repurchase lands which had previously been alienated. If such lands cannot be acquired by voluntary agreement they may be taken compulsorily, at a price fixed by arbitration.

In the year ended March 31st, 1910, the total area of the Ordinary Crown Lands sold or leased to settlers was 533,048 hectares. Of the "National Endowment Lands" 414,598 hectares were leased and 39,586 hectares of repurchased land was leased or sold.

Besides providing land for settlers, the government of New Zealand has also undertaken to make advances of capital to them on the security of their lands. The system adopted for this purpose was described in another article, entitled "State Advances to Settlers" which appeared in the August issue of the Bulletin of Economic and Social Intelligence.

From 1894, when the system was initiated, to March 31st, 1910, the government made 25,722 advances, amounting in all to 233,591,500 francs. On the latter date there were outstanding 14,508 loans of a total amount of 141,690,895 francs. Of these loans, 11,261 were of less than 12,500 francs in amount and 3247 were between 12,500 francs and 75,000 francs, the latter figure being the maximum sum advanced to any one settler.

Even as a commercial enterprise the system has been successful, for up to March 31st, 1910, the accumulated sinking fund amounted to 2,540,700 francs and a reserve fund of 1,250,000 francs had been set aside.

DATE CULTURE IN CALIFORNIA.

(Continued from Page 673.)

the dried pollen powder in bottles and dust it on the late blooms with brushes.

Age of Fruiting and Production.

Varieties differ in time of fruiting, some not beginning to bear till six or seven years from the planting of the offshoot. The Deglet Noor is notably precocious. It usually bears two or three small bunches the third year and by the seventh year is producing six or seven bunches of from ten to thirty pounds each. Occasionally twelve or fourteen bunches are produced, but this is likely to be followed by a light crop the succeeding year.

Date trees live to a very great age. They should continue to bear profitable crops for one hundred years.

Processing and Curing the Fruit.

In the date growing countries of the Old World it often happens that a large proportion of the crop is lost by fermentation. This is caused by a wet spell of weather occurring during harvest time. This element of uncertainty was a serious drawback in California also, for the fall rainstorms on the American desert are known to be extremely erratic. Realizing this the Arizona Experiment Station has endeavored by long continued research to gain some understanding of the chemical reactions taking place in the ripening date and from this knowledge, to devise a method of artificially ripening the fruit off the trees, thus preventing losses from unfavorable weather and putting the industry on a more secure footing. It is a great pelasure to note in Arizona Bulletin No. 66, recently issued, that this line of work has been successful. Deglet Noor dates have been successfully ripened by controlling the temperature and moisture in incubators. This method with certain modifications has been used in California this year in ripening Deglet Noors. Dates thus treated of very fine quality and attractive appearance were sent to Los Angeles market and sold at one dollar a pound. Perhaps the novelty of this new California product partly accounts for such a high price. By ripening dates artificially, the opportunity is provided to thoroughly wash and cleanse the fruit and protect it absolutely from the flies which are a great nuisance wherever dates are handled in the open. It is said that imported dates are picked and packed by the Arabs in a horribly unsanitary and filthy manner, and on account of being pressed into a sticky mass it is next to impossible for the consumer to cleanse them.

Packing for Market.

One of the most attractive features of high quality dates is the fact that they are not mashed together but lie separate in the box with skins un-

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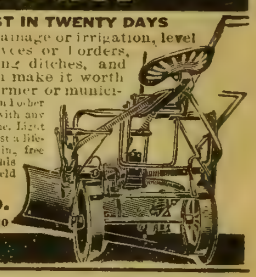

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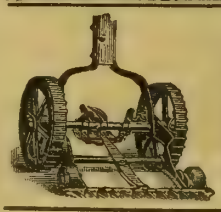

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Dairymen of Modesto, Stanislaus County, are forming a cow testing association.

broken. In this way they may be handled and eaten without soiling the fingers. The stickiness of the ordinary imported dates is one of their chief drawbacks. After incubation the dates are sorted into three grades, the first grade being the finest quality, the seconds being of good quality but slightly off color or somewhat blistered with broken skin. The third quality or waste is composed of all dates for any reason unfit for packing. These can be made into excellent vinegar.

Fancy one-pound boxes, preferably of tin with paper lining and tastefully gotten up outer wrapping add a great deal to the attractiveness of the product.

Scarcity of Offshoots of Good Varieties.

Owing to the expense involved in importing offshoots from Africa the U. S. Department of Agriculture only brought in a few palms of each variety. Offshoots from these multiply at such a slow rate that it will require a number of years before a sufficient stock is secured to plant out a large acreage. The two varieties imported in largest numbers are the Deglet Noor and Rhars. As fast as offshoots are available they are distributed by the government, one or two to a party in all parts of the date region. Of course the waiting list of applicants is already quite extended.

Unfortunately when these palms were introduced two kinds of date scale insect pests were introduced with them; the Parlatoria scale and the Marlatt scale. An effort was made to disinfect these palms on entry, but it was not successful, hence both pests became established in California. They occur only on date palms and it was soon found that fumigation was not an effective remedy. The Arizona Station has developed a method of fighting the scale with the gasoline blast torch. This treatment kills the scale but leaves the palm in such a scorched condition that it will not fruit for several years. It became necessary to scorch the trees in the oldest Deglet Noor orchard in Imperial Valley this year.

The presence of these scale pests makes the distribution of offshoots still more difficult, for county horticultural inspectors prohibit the bringing of infested offshoots into scale-free territory, and of course they are perfectly right in so doing. It is very difficult for private parties to secure any large quantity of offshoots true to name in Africa and any such shipment must run the risk of being held up by the local scale inspectors and if found infested ordered out of the state.

Growers Resort to Seedlings.

On account of these various difficulties in the way of securing adequate quantities of offshoots for planting out large acreages, growers have, for the present at least, resorted to the growing of seedlings.

In raising seedling palms about 50 per cent will turn out to be males and of the females a part, perhaps a third should be good marketable dates, a third indifferent, and perhaps a third will be worthless. To provide for this the seed are planted eighteen inches apart in rows four feet apart and allowed to grow two years. By this time any which may have shown themselves by a small bit of bloom to be males are destroyed and the rest planted in orchard form seven and one-half feet apart in rows thirty feet apart. This will allow for the cutting out of most of the remaining males as soon as their sex becomes known, and by some shifting of adjacent females a permanent orchard with the trees thirty feet apart each way will be secured. At some later date a few of the most undesirable trees may be cut out and replaced with offshoots taken from the very best trees. If desired, intercalary crops, such as vegetables, blackberries, or grapes may be grown between the tree rows for the first few years. This, of course, would be impossible in case the dates were planted on alkali land.

The question which seems to be bothering the growers at the present time is in regard to what particular kind of seed they should plant in order to secure the greatest percentage of good, marketable dates. At this stage of development this is a very difficult question to answer with any degree of certainty. Deglet Noor seeds from dates grown in Arizona or California are the most popular; partly because the pollen used in their production is known to be from males sprung from good edible dates; and partly because this variety is known to come into bearing very early. Fard seed also have produced some very fine seedlings. The writer has studied the fruit from a large number of seedling dates and it is his opinion that it is poor policy to plant any large quantity of seeds of the imported Halawi or "Golden Gate" date which is commonly sold by grocers. Too many of the seedlings, although very good to eat from the tree, are watery and sticky and do not show enough body to hold their shape and appear attractive when packed. The great majority of the seeds being planted are American grown Deglet Noors and Fards.

How to Judge New Seedlings.

When judging new seedlings the following points should be considered:

Precocity—It is, of course, highly desirable that palms give some indication of what they are at an early age.

Season—Early ripening varieties are preferable; flavor and sugar content; amount of fiber in flesh; color; packing and keeping qualities; size of stone; thickness and quality of flesh; toughness of skin. Date skin should be tough enough to stand handling, but not so thick and leathery as to be objectionable in the mouth. Amount and regularity of yield; manner of ripening—It is very desirable to have all the dates on a bunch ripen at approximately the same time. This enables the whole bunch to be cut at once and obviates the necessity of going over the tree several times to pick the individual ripe dates. It is also important that the date in ripening should soften from the apical end toward the stem. Those varieties, such as Rhars, which soften around the stem first, shatter off on the ground at the slightest touch and thus cause much loss and extra labor.

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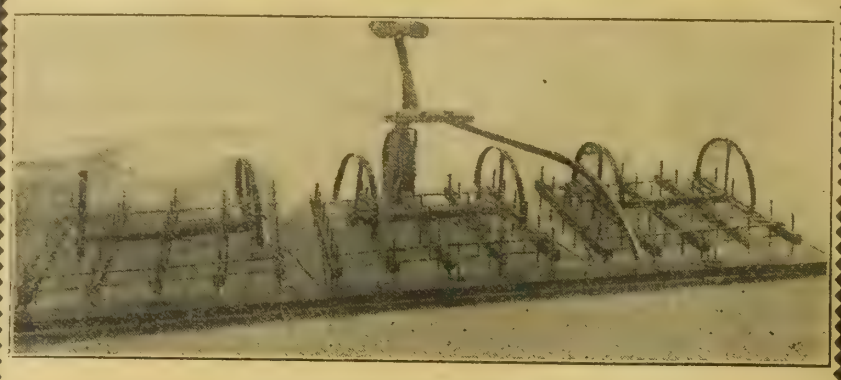

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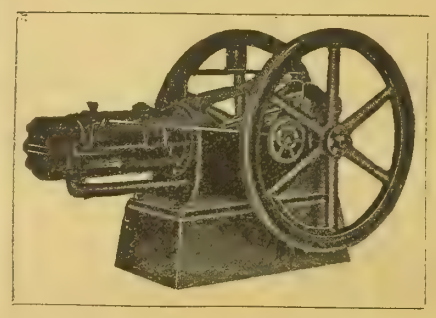

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Irrigation and Forestry

SOME IRRIGATION FIGURES.

Director Durand, of the Bureau of the Census, Department of Commerce and Labor, has issued the first official statement relative to the statistics of irrigation in the United States, collected as a part of the thirteenth census. The statement is based on a preliminary comparative statement submitted by Dr. Le Grand Powers, chief statistician for the division of agriculture in the Bureau of the Census, under whose supervision it was prepared by R. P. Teele, special agent in charge of irrigation. The figures are subject to revision after more complete tabulation, but it is not expected that there will be any material modification of the totals or percentages reported.

Acreage, Equipment and Cost.

The total number of farms irrigated in 1909 in the arid and semiarid states, comprising all or parts of Arizona, California, Colorado, Idaho, Kansas, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, Oregon, South Dakota, Utah, Washington, Wyoming, and part of Texas, was 157,862, against 107,716 in 1899, an increase of 50,146, or 46.6 per cent. Between 1899 and 1909 the whole number of farms in the states mentioned increased 31.3 per cent. Additional irrigated farms, totaling 4,320, in the rice belt of Arkansas, Louisiana and Texas, and 2,228 others in the humid states, most of which were truck gardens, were also reported. The total number of farms on which irrigation was practiced in continental United States was 164,410 in 1909, against 108,218 in 1899, an increase of 56,192, or 51.9 per cent.

The total acreage irrigated in the arid and semiarid states was 13,739,499 acres in 1909, against 7,527,690 acres in 1899, an increase of 6,211,809 acres, or 82.5 per cent. In the rice states 694,730 and in the humid states 28,919 acres were irrigated in 1909, making the total acreage irrigated 14,463,148 acres in 1909, against 7,539,545 acres in 1899, an increase of 6,923,603 acres, or 91.8 per cent. In the arid and semiarid states alone the acreage which all enterprises were capable of irrigating in 1910 was 19,335,711 acres, an excess of 5,596,212 acres over the acreage irrigated in 1909. The area included in projects either completed or under construction was, in the arid and semiarid states, 31,112,110 acres in 1910, an excess of 17,372,611 acres over the acreage irrigated in 1909. These figures indicate in a general way the area which will be available within the next few years for the extension of irrigation, and show that the area irrigated in 1909 can be more than doubled without undertaking new enterprises.

The number of independent enterprises reported in 1910 in the arid and semiarid states was 54,669. The total length of all ditches was 125,615 miles, of which 87,336 miles were in main canals and 38,279 miles in laterals. The number of reservoirs reported was 6,933, having a combined capacity of 12,872,256 acre-feet. The number of wells pumped for irrigation was 14,544, and the number of all pumping plants 13,951. The engine capacity of pumping plants was 207,241 horsepower. The acreage irrigated with pumped water was 478,288 acres. Flowing wells supplied water to 125,590 acres.

The total cost of irrigation systems reported in the arid and semiarid states was $304,699,450 in 1910, against $67,482,261 in 1899, an increase of $237,217,189, or 351.5 per cent. The average cost per acre was $15.76 in 1910, against $8.89 in 1899, an increase of $6.87, or 77.3 per cent. The average cost of operation and maintenance per acre was $1.07 in 1909. The cost of all plants in the rice states was $12,877,352, making $317,576,802 the total cost of all enterprises reporting in 1910, except those in the humid states. No report was secured on cost of enterprises in the humid states, for the reason that water for irrigation in those states is usually obtained from city waterworks or other plants not constructed primarily for irrigation purposes.

ELECTRIC LIGHT ON THE FARM.

Up to the present time the practice of lighting farm buildings by electricity has not been popular. A few of the more wealthy and progressive farmers have installed private plants for this purpose, but the majority of the well-to-do farmers who have considered it at all have deemed it an extravagant luxury. While it is true that the cost of electric light on the farm is considerably above that of kerosene, considering the first cost, yet the comparison between the two is as favorable, if not more so, to the electric light as the comparative costs of an automobile and a horse and buggy are to the automobile. There is some room for argument concerning the comparative advantage of the electric light and the automobile over their competitors, the kerosene lamp and the horse and buggy, respectively, but in the writer's opinion the electric light is more a necessity and less an extravagant luxury than is the automobile. Today it is no uncommon occurrence to find in a well-to-do community every third farmer the owner of an automobile, but it is a rare occurrence to find a farmer blessed with the convenience afforded by the installation of a small private lighting plant.

The conveniences of electric light for the farm house and outbuildings on the farm are undisputed, but its practicability is not so generally acknowledged, or, I might better say, understood. In the vast majority of cases it has not even been considered. Some of the reasons for this, which appear to the writer, are as follows: First, the seemingly prohibitive cost of installation. Second, the fear of coming in contact with live wires. Third, the fear of its causing fire. Fourth, that it requires a man with electrical knowledge to operate the plant. Of the above reasons the first is the only one which can in the least be considered a reason, and it has in a large measure been removed by the advent of the "Tungsten" lamp, which has come into use in recent years. It takes approximately one-third the amount of electricity for a given amount of light which lamps prior to its advent required, and hence for a given amount of light the capacity of the necessary plant is cut to one-third that formerly required. The second reason is unfounded. A voltage higher than 30 volts is seldom used, and a child can come in contact with that without fear of injury, and an adult can come in contact with 250 volts with very little danger of serious injury. The third reason is erroneous, as the danger of fire from electricity in a well wired house is practically nil, which is more than can be said for kerosene lights. The fourth reason is without grounds, as any intelligent person can, by following the simple instructions given by the manufacturers, operate the plant with perfect satisfaction.

At present complete equipment, consisting of engine, dynamo, storage battery, switchboard and all auxiliary apparatus with sufficient capacity for the large majority of farms, can be

(Continued on Page 701.)

Bees and Their Care

HOW TO GET BEST RESULTS IN BEEKEEPING.

By J. F. Crowder.

In hiving an ordinary swarm of bees, never place them over five frames of starters or sheets, just what they can easily cover and care for; then there will be practically no sagging, buckling or melting down. On this plan the bees will invariably draw worker comb, whereas when hive is filled to its capacity with starters the outside ones will in most cases be drawn out drone comb and crooked. If the keeper is watching his bees, when the first five are practically done or the bees are wanting more comb,— which they will show by starting comb-building on the quilt or cover,—then add two other common frames by setting them in alternately through the other five drawn combs. Always put the first five to one side, never in the middle of hive, keep adding other frames from time to time until hive is full. In this way you will find hive full of good brood. Be particular to have the hive set level crosswise of the combs, but tipped a little to the front.

For Extracted Honey.

In placing the super on for extracted honey keep up the same process as in the brood chamber, by drawing out the two outside combs of the brood chamber and putting in their stead two other starters by alternating through the brood nest. Put these two combs and two full sheets of foundation (never starters) in super, alternating combs with foundation. Keep adding from one to three as the colony requires. When completed you will have a colony of bees you will be proud of.

So many so-called practical beekeepers just dump their bees into hive with its full capacity of frames, with hive toppled over to one side. In a few days they take a peek into the top, think they are ready for a super, and place the super on without looking into the brood chamber, then wait and wonder why they do not go into the super. If they should work in the super they would draw out a bunch of lopsided combs that one could not get back into the same hive.

Comb Honey.

For comb honey production bring up the brood chamber in the same way. Before adding the super, if convenient, place in a comb super at least one section filled or partially filled with honey from last season, or from another hive.

Taking Honey.

How and when to take the honey. There is perhaps no other commodity that is derived from so many sources, unlike sugar from only cane and beets, or syrups from cane and corn. Honey is produced from many different plants in all seasons of the year. So for the apiarist to handle his business intelligently he must know the source of the honey and duration of flow, whether orange, sage, alfalfa or clover. Most all sections of the state have various minor honey bearing plants from which the bees will partially fill their hives in the early part of the season. All such honeys should be removed from the supers, no matter if there is only a pound or so. When the bees bring in honey from the source whence he expects his main crop, he will get the pure product. I have seen on the market this season honey marked "Pure Orange Honey," when it was not over 40 per cent orange.

Fence corner beekeepers in this locality call their first extracting orange honey, while not over 40 per cent was from orange blossoms; the rest from hoarhound and eucalyptus bloom. I asked the trade this spring if they wanted some orange honey. They said "No, we do not like it. It's too bitter." We induced them to try a can of some that we know was pure orange. The result was from 20 to 25 can orders at nine cents per pound net. When you realize that the orange flow, or your main source whatever it may be, is over, then clean up, as the bees will swing back onto the hoarhound, etc.

Pure Product.

To get a pure article in the comb honey line is a little more difficult unless the apiarist knows his territory to a T. The super should not be put on until the actual flow is on, holding the bees down with the extractor or by proper manipulation to prevent swarming. In this way one is able to get a pure article—pure orange, pure sage, etc.

Packing and Marketing.

Properly packing and marketing honey is about half of the fight; off grades of honey command a very poor price, from four to six cents per pound, while the pure and fancy article readily moves at from eight to ten cents per pound. Packing honey is an art of itself. Always put your product in new clean packages. You will always get your money back and more. Any article that looks fancy and clean, commands a ready sale.

Many a merchant does not like to handle comb honey owing to its smeary and leaky condition; this is partially his own fault, and the packer's. The next grocery you pass just take a look at his honey displayed and count the sections that he has bottom side up. Merchants are not the only ones who turn this trick. I have known beemen to turn the section sideways, bottom up, any old way to get them to fit into the case and not touch each other, regardless of the topsy turvy condition. In this way they reach the market in a smeary condition which is disgusting to any down-to-date merchant. This dripping honey could be minimized by the producer putting the honey on shelves bottom up on dripping slats a few days before packing. Teach your merchant how to set the section right end up. You will be a great help towards educating and creating a demand for your product. But don't put your honey on the market as pure orange blossom, or pure mountain sage, when you know full well that it is nectar from many different sources, for the man who does specialize his various nectars has that fabrication to overcome in disposing of his product.

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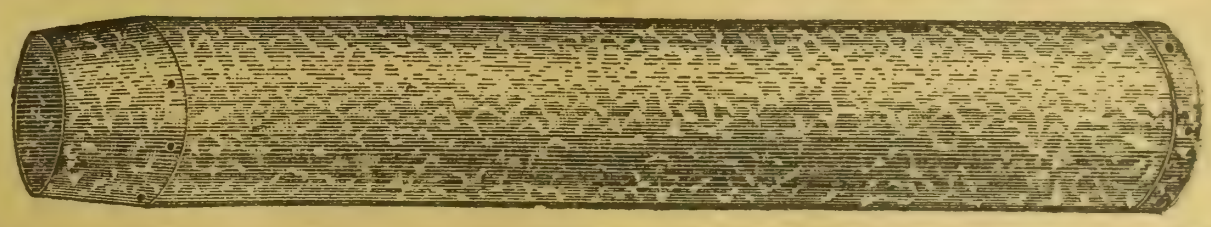

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SOIL EXPERIMENTS.

Professor J. H. Norton of the Citrus Experiment Station, is especially desirous of securing at once observations of citrus fruit growers as to the effect of fertilizers, or as to the effect of different soils on citrus trees. Anyone who will send to him any data will confer a favor and it will prove of benefit to other citrus growers.

HAPPY NEW YEAR.

The year 1911 has passed into history and we are entering a new year which we hope for the readers of the Cultivator will be by far the most successful ever given to them. In many respects the old year has been very satisfactory to California producing interests. Some have found reason to complain, but we wish for those that the coming year may produce so great a measure of happiness and prosperity that it will make up for all that is past.

AGAIN LEADING

With the world's annual production of oil reaching 200,000,000 barrels, the United States produces 128,000,000 barrels. Of these 128,000,000, California heads the list with 73,010,560. This output is more than twice as great as that of Pennsylvania in her greatest glory. California and Oklahoma produce as much as all the rest of the world outside of the United States. The average price during the year in California is 49 cents per barrel.

FROSTED.

December is closing with some most disagreeable weather; it has not rained; it has been cold. The northers and other ill-tempered winds have added to the discomfort and wasted the vitality of all plant life. To cap the climax the Christmas season saw disagreeably low temperatures. What the exact damage will be no one can estimate. The orange growers are hopeful, but the low temperature all night long and coming after the extended dry weather, especially the drying winds, causes much apprehension. Some sections will be only slightly injured so that California will ship large quantities of citrus fruits. Building of fires was not as general as it should have been though many did their best. It is said that in some sections this was the coldest weather in Southern California in 24 years.

BALANCE WHEEL

An Eastern writer speaking of the farmer as a power in politics refers to the recent suffrage vote in California. The first few days after the election, the cities' reports being first in, the press conceded absolute defeat to the suffrage amendment, but returns from the farming districts completely reversed the figures. In Maine's recent election as to whether the state should go wet or dry, the first day after the election showed a vote emphatically favorable to the licensing of the saloon. Two days later the returns from the back districts reversed the count. In New Jersey the vote on the race track gambling proposition was thought favorable to the gamblers until the country's vote came in and drove them from the state. The farmer sometimes rebels at the domination of the city and again he has the satisfaction of witnessing his own ability to upset the best laid plans.

INDEX.

Over 700 pages of the size of the Cultivator makes another large book which has been handed to our readers during the past six months. We believe we have remarked that the dollar a year which purchases the two volumes of the twelve months' issues, secures a book larger than Webster's Dictionary, and we believe it is so valuable that no one engaged in farming in California, Arizona, Oregon or Washington can afford to be without it. We believe every number is well worth filing away and binding. Of course, ultimately much that is in the Cultivator will appear in book form, but for the next two years we doubt not there will be facts to be gathered from back numbers of the Cultivator which no library in the country can supply. The filing is made of more value by the index at the end of each six months' volume. The index for Volume 37, July to December, 1911, appears on Pages 700 and 701. A look over it will show that the articles appearing in the Cultivator cover a range which touches almost every feature of California's agriculture and horticulture.

FRUIT GROWERS CONVENTION

It was a great shock to the attendants at the State Fruit Growers Convention held at Santa Rosa last week when one of the representative fruit men of the state and an enthusiastic worker for the best fruit interests of the state suddenly expired on the convention floor. This was Mr. Homer Craig, President of the Santa Clara County Farmers Union. Mr. Craig has for a long time been working for the using of white labor as much as possible in the harvesting of California fruits. One of his suggestions has been the changing of vacation time in all the schools of the state so that the students can spend as much time as possible in the orchards during fruit harvesting. He had just finished the address on this subject when he suddenly passed away.

Notwithstanding this occurrence the delegates proceeded to carry out the program as arranged by State Commissioner Cook. It was a most successful convention and was very largely attended. One of the principal resolutions introduced was that urging the enactment of the national quarantine bill now before Congress. This resolution was passed unanimously, and it is hoped that it will result in calling the attention of Congress to the great need of this country. There is no such law on the American statute books, while many European countries prevent the entrance of plants or fruit without most rigid examination.

The people of Santa Rosa extended a true California welcome.

MONEY FOR RAISINS.

We have from Receiver W. R. Williams of the California Raisin Growers Association a letter in which he refers to the payment of a forty per cent dividend on account of the 1903 crop. The dissolution of the old association, while, in the very nature of things perhaps, necessary, was disastrous to the industry. Faulty as it was, if the old association could have been kept on its feet to steady the market, the industry today would be in a far better condition. Whether the present effort looking toward Exchange methods will lead out of the woods and bring prosperity again or not, we do not know, but sincerely hope it will. The mistakes of the old association should be warning of some of the rocks in the way of co-operation. As to this particular distribution, we quote from the Fresno Republican:

"Approval was attached yesterday by Judge Church to the third account of Receiver Williams, and he authorized further the distribution of $122,800 out of the cash balance on hand of $126,811.81 collected on judgments in the California Raisin Growers Association. This distribution covers a third dividend of 40 per cent on docketed judgments amounting to approximately $307,817, on which with this dividend 75 per cent will have been realized. Bookkeeper Funch began in the afternoon making payments by mail, and says that if grower creditors who cannot call at the receiver's office will send him their addresses on postal cards the work of facilitating making payments will be greatly aided. There have been many changes in addresses, and the list that he has is of residences and locations of two years ago when the second dividend payment was made."

CO-OPERATION.

The great difference between producers and consumers prices is causing continued discussion of means to bring the two figures closer together. Co-operation has been successfully worked out as a means of marketing the farmer's products, but in the matter of purchasing more is to be learned. On this point N. J. Bachelder, Master National Grange, said in his annual address:

"The marked increase in the cost of living in recent years has directed public attention to the great discrepancy between the retail prices of food stuffs paid by the consumer, and the prices paid to the farmers. As a remedy for what is alleged to be the excessive profits of the 'middleman' or dealer in farm products, the farmers are everywhere forming or preparing to form, co-operative associations for the purpose of selling their crops directly to the consumer. A large number of these associations have formed and many others are now in process of organization.

"The advantages to the farmers of combining with their fellow producers for the purpose of avoiding the payment of high charges by commission houses, and for securing more favorable freight rates, storage charges, etc., have been so manifest that it is only a question of time when the great bulk of all farm products will be marketed through some form of co-operative agency. There is no reason why the same system should not be applied to the purchase of the goods used by the farmers, so that they can buy these goods at practically wholesale prices.

"The favorable conditions for the adoption of co-operative systems has attracted the attention of professional promoters, who are endeavoring to utilize the desire of the farmers for co-operation as a means to further stock-selling schemes. Caution should be exercised by the members of the Grange in giving their endorsement to any of these associations, and the character and financial standing of the organizers should be carefully looked into before joining them. The co-operative principle is sound, and is destined to govern the immense volume of trade from the farm to the city and from the city to the farm, but there will doubtless be many failures unless great care is taken to establish real co-operative societies, conducted for the benefit of all the members, and not for the profit of a few promoters. Membership in co-operative associations should be by individual members rather than by a Grange."

Agricultural News Notes of the Pacific Coast

Northern California

There are 210 farms on the Orland reclamation project.

A fourteen hundred acre ranch near Dixon is to be subdivided.

Sonoma County's planting of prune trees will be greater than ever before.

California is producing more eggs than ever before at this season of the year.

Shortage of next year's hop crop is already predicted, as new acreage will be extremely light.

The California Almond Growers Exchange announces that practically all almonds are sold.

The Sacramento Valley claims that it will ship more than a thousand cars of oranges this season.

Hop men of Ukiah, Mendocino County, are planning to fertilize their yards before the next season.

Sonoma County's wine output for the past season has been about thirteen million gallons.

The principal part of the fall crop of the Sacramento River Delta section is being stored in the Sacramento fruit sheds.

The Cosumne Irrigation Company is completing plans for irrigation of a large body of land in Sacramento County.

The entire northern end of the state is making heavy demand on all nurseries for planting stock for the coming season.

The Alvarado Sugar Factory is to be moved and it is predicted that some section in Sacramento County will be chosen.

Some most interesting experiments have been made with water requirements of alfalfa at the University Farm at Davis.

A San Francisco produce concern has secured a corner on onions. It is claimed they have practically the entire crop of the state in hand.

The most interesting feature of the State Fruit Growers Convention at Santa Rosa last week was the consideration of the Mediterranean fruit fly menace.

The board of supervisors of Amador County is being petitioned by the farmers at Jackson to control the damage done by the Penn Chemical Company's smelter at Campo Seco.

Officers of the Grange at Napa are: Master, John Wilson; overseer, Charles Bates; lecturer, Miss Annie Graves; steward, Elza Dougal; chaplain, Mrs. C. Bates; treasurer, Dr. W. E. Alumbaugh; secretary, Mrs. Nellie Hunt; gatekeeper, H. A. Chapman; Ceres, Mrs. J. J. Swift; Pomona, Mrs. D. Bohen; Flora, Mrs. A. Martin; chorister, Miss Jessie Redfield.

The officers of Santa Rosa Grange recently elected are: John Strong, worthy master; N. A. Griffith, overseer; C. E. Wingate, lecturer; S. H. Stone, steward; C. E. King, assistant steward; Mrs. M. M. Gregory, chaplain; H. N. N. Latimer, treasurer; Miss Fannie L. Gamble, secretary; George W. Smith, gatekeeper; Mrs. Ida Wagner, Ceres; Mrs. S. H. Stone, Pomona; Mrs. A. Cary, Flora; Mrs. J. Strong, lady assistant steward; Mrs. C. E. Gamble, pianist; Mrs. R. Coulter, member of executive committee.

Central California

Some olive orchards at Lindsay, Tulare County, have netted $20 per tree.

Alfalfa growers of the entire valley are reaping immense profits from alfalfa.

Hanford, Kings County, recently shipped 1,200 hogs to the Los Angeles market.

Tulare County orange growers are estimating $1.00 per loose box as returns this year.

Celery fields in San Joaquin County averaged a thousand to twelve hundred dozen per acre.

A corporation has been formed to handle a large tract of reclaimed land in San Joaquin County.

One prune ranch near Visalia, Tulare County, yielded this last season at the rate of $417 per acre.

At the last meeting of the San Jose Grange discussion of plans for next season's fruit crops was a feature.

Lodi fruit growers recently met and discussed the interests of the new Deciduous Fruit Protective League.

The Hughson Condensed Milk Company building is enclosed and will soon be in shape to handle products of the dairy.

The first car of oranges ever shipped from Ducor was sent through the Porterville packing house last week.

Citrus growers of Tulare County are all happy over the excellent returns. Every car shipped has brought good prices.

The San Jose Chamber of Commerce is asking the question, "Why not a boulevard around the entire valley?"

An orange grower near Lindsay is suing a contractor because of alleged improper planting and care of an orange orchard.

An interesting meeting of the Santa Cruz Poultry Association was held last week. The principal discussion was on feeding.

The Sempervirens Club of Santa Clara County is making an effort for the building of a fine road into the State Redwood Park.

The firm market condition and big prices are giving Santa Clara Valley prune growers a more comfortable feeling than for some years.

The State Highway Commission met representatives of many San Joaquin Valley towns at Fresno last week. No definite route was announced.

A grape grower at Sanger has sued a buyer for $2,700 because of refusal to take his grapes after he had contracted for them at $40 per ton.

Santa Cruz County is finding its apricot crop is becoming one of the most important. Commissioner Volck has just issued a bulletin on sprays for apricot trees.

Valley dairymen who ship cream to Los Angeles market are objecting to the strenuous ordinance recently enacted in that city, but they will doubtless meet its requirements.

Horticultural Commissioner Sharp of Kings County has warned farmers to use extreme care in buying alfalfa seed. He especially urges the use of California grown product.

Southern California

Carpinteria, Santa Barbara County, has its bumper walnut crop.

Large plantings of broom corn are promised for the Imperial Valley.

For the first time, Arizona oranges have been sold from Los Angeles fruit stands.

Ethanac, Riverside County, is developing much water in new wells which have been sunk.

It is rumored that there is a great scheme on foot to manufacture fertilizer from kelp beds along the coast.

The second payment of the Lima Bean Growers Association of Ventura County aggregated seven thousand dollars.

Riverside ranchers are in arms over closed season on rabbits. They are destroying young grain and other crops.

The sugar factory management will reclaim a large tract of swamp land near Arroyo Grande, San Luis Obispo County.

Poultry breeders of Southern California are planning for a great show to be held in Los Angeles early in January.

Escondido, San Diego County, has decided to make an exhibit at the coming National Orange Show at San Bernardino.

San Bernardino County is not especially strong on raisin grapes, but little Etiwanda claims an output this year of about 400 tons.

Fruit growers of San Luis Obispo County are making the claim of having one of the best apple producing counties in the state.

A rancher near Pomona claims the world's record with a production of 40 tons of sugar beets. Some of the beets averaged 100 lbs. each.

San Bernardino offers the biggest prizes ever offered for a citrus exposition in Southern California. The show is to be held in February.

Fire wardens in Ventura County have caused the arrest of many who refused to obey the call at the recent forest fires and assist in its control.

Dairying has made great advancement in the Coachella Valley, Riverside County. Heretofore the main interests have been in vegetable gardening.

The Highgrove Orange Association has built an extensive addition, one feature of which is a fumigating room for the disinfection of orchard picking boxes.

The Redlands Golden Orange Company is having trouble in the Superior Court with the number of employes who were discharged and afterwards filed claims for their salaries.

Butter shippers of Imperial Valley are complaining to the Railroad Commission because of discrimination by the express companies. The San Joaquin Valley has a lower rate than does the Imperial.

Friends of R. S. Woglum, entomological expert, sent by the department to India in search of the parasite of the white fly, are saying "I told you so" when they read reports of his return with the bug that promised to do the work.

The Coast

Spokane is making a move for union stockyards.

Idaho is shipping its hay as far east as West Virginia.

Tucson, Arizona, is under a blanket of the heaviest snow for two years.

A $25,000 creamery and ice plant is to be erected at Coltville, Washington.

Some especially fine steers sold on the Portland market at straight 10 cents.

An orange grower near Tempe, Arizona, claims a net return of $1500 per acre.

British Columbia apple growers took forty-three prizes at the Spokane Apple Show.

The city health department of Spokane has started a war on cholera infected hogs.

The Inland Empire Poultry Association closed its most successful show at Spokane last week.

The Farmers Union at Pullman, Washington, added 21 new members at its last annual meeting.

Over a thousand fowls were exhibited at the Asotin County Poultry Show at Clarkston, Washington.

Farmers' Institutes were held in Arizona last week at McNeal, Whitewater, Sevoss, Cochise and Wilcox.

Pullman, Washington, is issuing a circular on pear blight and growers have determined to make a persistent fight on the pest.

The American National Livestock Association at its annual meeting at Denver, Colorado, elected Hon. H. A. Jastro of Bakersfield, its next president.

It is predicted that the mohair industry of the northwest will grow with leaps and bounds during the next few years. It has already proved very profitable.

The Northwest Stockman's Association held its annual meeting at Lewiston, Idaho, and elected officers for the coming year. Paul Clagstone of Idaho is president.

The livestock industry of Arizona has increased greatly during the past three years. During the year ending June 30th, 1911, the total output was 250,133 head.

The Nevada State Veterinarian reports havoc is being played with the swine in Lyon and nearby counties by hog cholera. Over a thousand hogs died within a few days.

The Oregon Wool Growers Association at its recent meeting at Baker demanded a change in the wool tariff especially that the tariff be on a basis of scoured wool.

Seattle jobbers have decided to resist the practice of California walnut growers which they claim is to bill "gross weight." We believe, however, that the walnut growers association already grants net weights.

A committee appointed by the Walla Walla convention of the Inland Empire Fruit Growers nearly a year ago has prepared a report and submitted proposed by-laws for an incorporation which it is hoped will have to do with the marketing of the fruits of the Northwest.

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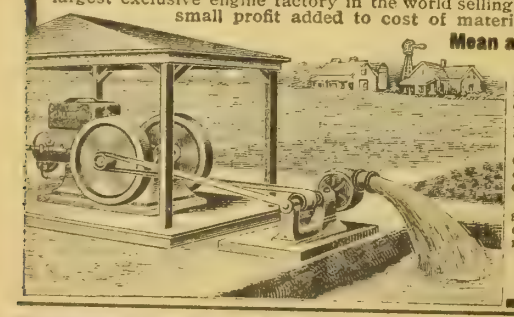

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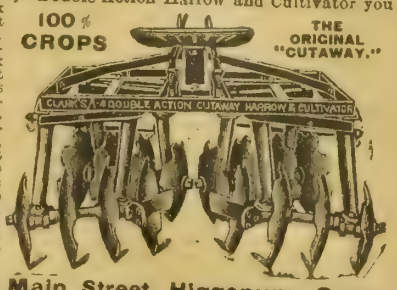

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Live Stock and Dairy

Dairymen and stockmen are requested to write of their experience. Mrs. Sherman is always willing to answer queries and this, with experience of other workers, will make this department of greater value.

THE CORN PLANT.

By Mrs. M. E. Sherman.

The old cry that we cannot grow corn in California simply means that we have not tried to do so in an intelligent manner. In portions of the state corn has been grown for many years in a haphazard way without selection of seed. When it did well it was our skilful handling; when it failed, it was charged to the changing climate owing to excessive use of irrigation water of the neighbors, or else to the cutting off of the forest changing the rainfall. It is a freak of the human imagination to put all our failures on something outside of ourselves. The old-time folks used to call it the will of Providence, yet all the time they knew that the Heavenly will was that man should be perfect in himself and in his ways. What humbugs we are to deceive ourselves. Now climate in California is all right, even the heat of Fresno and Imperial are good assets, if used as they should be to increase the agricultural products.

Climate is reasonably fixed in its variations and we can meet its conditions by carefully selecting the seed of the plants that do best under its conditions. Did you ever consider how quickly success comes in improving annual plants? Six to ten generations will fix a type. With a generation a year, six to ten years will improve an already domesticated plant to a high degree. Now what can be done with corn in a warm climate to improve the crop? That it is possible to do this is proved by a record of a corn crop grown in South Carolina that is a wonder. Now I would not quote this if it were not in a government bulletin of 1898. A record of two hundred and sixty-three bushels to an acre, that story sounds like some of the tales of the fortunes to be made in growing eucalyptus.

The work of breeding a corn more resistant to drouth is now being taken up in earnest. This can be readily done for there is already great difference in the resistant qualities shown in an ordinary field. We had a field of corn just about ready to tassel out when the head gate of the canal washed out. Now at tasseling time corn should receive a heavy irrigation to set the crop of ears well. That corn field went three weeks without a drop of water; only one-third of it rallied when irrigated again. That third produced as much corn as usual. Had the seed from this corn been saved and the next year a purposely made drouth occurred at the tassling time, the resultant seed would have shown a greater degree of resistance than that of the first year. Little by little corn can be trained to resist hardships.

The corn plant as we find it in the Middle West is at home in a humid atmosphere of sixteen or more inches of rainfall during the growing season, with a daytime temperature of seventy to eighty degrees, with a night temperature of twenty to thirty degrees less. Now we need a corn plant that will grow at a temperature of one hundred to one hundred and five and in great dryness of atmosphere without blasting. Some of these qualities have already been bred into the corn of the Great Valley. The toleration of heat is good if it does not go over a hundred with hot winds just at the time of the blooming. When corn is not right at the tasselling period it will stand any heat we have ever had, most proudly. Hot winds with a very high temperature seems to dry the pollen up before it reaches the ear of corn or rather the embryo that will make the kernels of the ear of corn. This is commonly expressed by saying that the corn will blight if the silk is dried up by heat too soon.

The critical time of tasselling is often safeguarded by the time of planting. The intense heat comes in short snaps of rarely more than three days' duration and falls in the average years, after the fifteenth of June and before the middle of August. After the fifteenth of August the nights are long enough to temper the heat of the day time. If the corn is planted early we can count the days to tasselling as under sixty-five if the corn matures in one hundred and thirty days. By later planting we can escape also the blasting of the ears. We do not, however, secure as heavy a forage in the later planted corn. It is safe to plant corn from March to July tenth in our part of the country (Fresno). The late planting of corn should be considered as good only where the water supply holds until the middle of August or to September first.

Any one may improve the seed he is using in a simple way without sets of rules for scoring. In our corn we have the resistance to heat and drouth somewhat established and wishing to increase the ears and leaves we tried the following simple plan with good success: Fifteen years ago a yellow dent corn called Legal Tender was used as the improver. We have a corn planter that sows from two separate hoppers, one over each drill. The home grown corn was used in one hopper and the eastern seed in the other one, making alternate rows of each kind. The field was cared for in the ordinary manner until tasselling time, then a careful man was sent through it to pull out of the corn on plants from the home grown seed every tassel. This stopped them from pollinating but left the eastern corn to become the fertilizing element. Then the rows of eastern corn were looked over and whenever a weak-growing stalk was found it was detasseled as well. One year's crop raised from this crossing increased the silage corn two feet in height and put two ears on nearly every stalk. We rested content with this seed for a few years and then repeated it, using Leaming, as we could not get Legal Tender seed. Since then we have once more crossed the seed corn in this way with Reid's Yellow Dent.

This selection was not for improving the ears or grain, but along the line of general improvement of the entire plant. The yellow dents are the best for us, we have concluded, as they seem to have better roots, and if the irrigation water gets loose the yellow stands up where the white falls over and is lost.

In Florida there are two kinds of corn that are worthy of our attention as a cross on the corn we now have, the Blitch and the Poorland. The Blitch is a Yellow Dent of a fairly reg-

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Dairymen near Modesto have been fined because of noncompliance with state health laws.

ular type. The ears from cobs having a pinkish tinge are regarded as giving the best results for seed. The Poorland is a corn that grows well on the drier, sandy soil and stands intense heat without shrivelling badly.

No, do not think that corn cannot be grown well in California. We need it too badly to balance with the alfalfa not to make a supreme effort to breed a corn that will meet the conditions of climate and heat.—M. E. Sherman.

TEXAS FEVER TICK.

The well-known transmitter of splenetic or Texas fever of cattle, Margaropus annulatus, Say, in importance far exceeds any of the other ticks found in this country. It has received attention in various departmental publications, and will consequently be given but brief notice in this paper. It is found throughout the Southern States. The original northern limit of its range in the eastern part of the country corresponded rather closely to Mason and Dixon's line. The work of eradication which has been undertaken recently has reduced the infested area considerably. Closely allied forms occur in other parts of the world, where they transmit diseases of cattle which are very similar to, if not identical with the splenetic fever which occurs in this country.

This tick causes a direct loss of at least $40,000,000 a year in the United States; indirectly the damage is much greater. Although primarily a factor connected with cattle raising, the importance of this species extends far beyond that industry. It practically inhibits the proper utilization of livestock and thus prevents a rational system of agriculture. In this manner the whole structure of the South is affected and its development held back. A better system of agriculture and rapid development are sure to follow the eradication of the tick.

There are two peculiar features of the life history of this tick. It is practically restricted to cattle as a host, and it does not fall to the ground for the purpose of moulting. These two peculiarities render the control of the fever tick a comparatively simple matter. Its failure to exist on other hosts renders it practical to free areas of its infestation in a comparatively short time by the simple device of keeping the cattle out. Likewise the dipping or greasing of cattle is a certain and economical method. Both of these means are being practiced by the Bureau of Animal Industry of the Department of Agriculture, which has undertaken extensive work which will ultimately relieve the South of a most important obstacle to development.—U. S. Dept. Year Book.

COOPERATE.

There are three important reasons why the small independent farmer cannot get the best prices for his products. In the first place, he has but a small amount of any one thing to sell, and it makes very little difference to the dealer whether he gets his small business or not. In the second place, the dealer who buys his products must also buy from a number of other small farmers, with the result that what he gets in any community is, as a rule, not uniform, and must sell as mixed stuff and at a low price; consequently he cannot pay as much as in many instances the product of the individual farmer is worth. The third condition is that, as a rule, the small farmer has his product at a town or terminal market where, if he does not sell, he is under considerable

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HERE is the way to feed Alfalfa so as to produce two to six pounds more milk per cow a day—feed it with Steam Dried Beet Pulp

Alfalfa-fed cows are simply ravenous for Steam Dried Beet Pulp—a fact full of significance to the dairyman who studies his herd and pays close attention to feeding problems. He soon learns that alfalfa, though rich in protein, is deficient in carbohydrates, the element which Steam Dried Beet Pulp supplies. Cows, like mankind, crave variety in their feed, and they show their appreciation of Steam Dried Beet Pulp in the ration by giving a largely increased milk flow, with a higher per cent of butter fat.

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Makes More Milk

It is cheaper than bran or rolled barley and greatly outclasses them as a milk producer.

Steam Dried Beet Pulp is the clean beets from which the sugar factories have taken out the sugar, *dried by steam*. Steam drying insures clean, pure pulp, uniform in quality, appetizing in color. It is never blackened by smoke, never burned, keeps indefinitely. Packed in 100-pound sacks.

Your dealer should supply you and give you facts about this feed that is increasing the milk and butter production of the country. If he will not, write us, and we will see that your needs are supplied.

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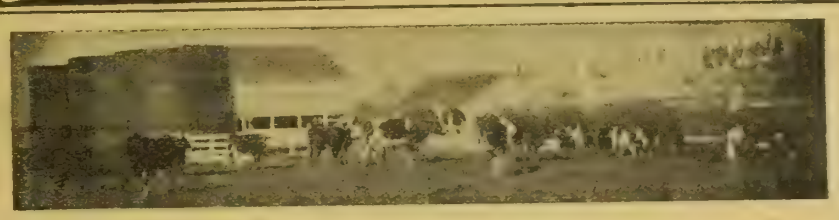

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There is no good reason to defer the purchase of a DE LAVAL cream separator until Spring. On the contrary you may buy one now and save half its cost meanwhile. Moreover, if you can't conveniently pay cash you can buy a DE LAVAL machine on such liberal terms that it will actually pay for itself.

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When it comes to a choice of separators DE LAVAL superiority is now universally recognized. Those who "know" buy the DE LAVAL to begin with. Those who don't replace their other separator with a DE LAVAL later—thousands of users do that every year. If YOU already have some other machine the sooner YOU exchange it for a DE LAVAL the better.

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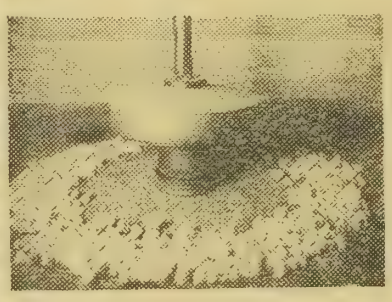

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expense to hold his product or to get it back to the farm. By cooperation farmers can produce uniform products. By cooperation in selling they can offer for sale large quantities which will attract buyers; and by bringing the buyer to them they can either sell their product for what is offered or hold it on their farms until a better price can be obtained. What cooperation has done for the butter trade it can do for other products.—University Farm News.

HOG KILLIN'.

By Charles Dillon, Kansas State Agricultural College.

Are farmers returning to "hog killin'" day? If they are not figuring on doing this, why are so many asking for details of the system used by Henry J. Waters, president of the Kansas Agricultural College, in curing and smoking meats? Nothing more interesting has come up in recent years. Within a month the demand for this kind of information has grown with the most remarkable rapidity. Since the directions were first printed, nearly a year ago, letters have never ceased coming; but recently, since work began on a slaughter house for the college in which to work out all these details before the students—since the instituting of a course teaching this kind of work—the interest has increased amazingly. Farmers in Idaho and in Maine, in Texas and in Montana, have written asking for directions, saying they had lost their original copies. Here, a little more fully, are the rules as used in President Waters' own operations of killing and curing:

To 1,000 pounds of meat take the following:

40 pounds of common salt.
10 pounds New Orleans sugar.
4 pounds black pepper.
1½ pounds saltpetre.
½ pound cayenne pepper.

Weigh the meat and take such part of the ingredients as that is a part of 1,000. Let the meat cool thoroughly. After thoroughly mixing the ingredients, one-half of the amount should be rubbed well into the meat. Put the meat in a dry, cool place. Let it remain two weeks; then rub on the remainder of the cure and let it lie about six weeks, when it is ready to hang. In some states the meat may be put in a cellar, but only if the cellar be thoroughly dry. The rule "never in a cellar" would apply to Missouri, but in Kansas one might easily have a suitable place underground. Never use a warm or moist place.

It is important that the meat be well rubbed each time the cure is applied, and that plenty of the cure be forced into the hock end and around the joints. Less cure should be used on the thin sides than on the joints. The heavier and fatter the meat, the longer the time required for curing. The warmer the weather, the quicker the meat will take the cure. The best time to kill will be in cool weather, after Dec. 1 to Feb. 1. You can kill in November if the weather is cool, but there is much danger that it will turn warmer again. Kill at the beginning of the cold wave. You will produce the finest flavor if you give the meat two or three months of cool weather, hanging, before the warm days come. About the right size hog is 175 to 225 pounds, and 180 to 190 pounds for a handy sized ham. You should have a March or April hog.

Killing and Curing Meat.

While in general a light straw color would indicate sufficient smoking, it is always safe to try a piece of thin bacon or shoulder, to be certain that the process has been carried far enough to give proper flavor and cure. The hams may be kept one, two or three years without detriment, and will improve in flavor up to the end of at least two years. No deterioration will take place for even five years if a ham is properly cured.

Smoking should be done slowly. It should occupy four to six weeks, a little every day, and with little heat. Slow smoking gives a delicate flavor. After the smoking is finished, wrap each piece in paper, put in an unwashed flour sack and hang in a dry place.

The brine cure requires the same materials, minus the pepper. When the meat has cooled, rub it with salt and let it drain over night. Pack in a clean barrel, with the heavy pieces, hams and shoulders, at the bottom. For every 100 pounds use eight pounds of salt, two pounds brown sugar and two ounces of saltpetre. Dissolve in four gallons of water and cover the meat with it. Thin sides should remain in this four to six weeks, and hams six to eight weeks. After it has dried thoroughly, smoke as in the dry cure.

Shoulders should be cured with the hams. For eating until June 15 they are as good as ham, and cheaper.

How shall you determine just when the meat has been cured? Take one of the shoulders, saw off two or three steaks, and note the color of the lean. If the inner muscles are turning a red tinge and the outer muscles are quite red, the indications are that it is sufficiently cured. It is best to fry these steaks. If the outside is a bit too salty and the inside not salty enough, it is time to quit curing. Hang it up for smoking.

Here are a few figures showing what should be procured from a 250 pound hog:

35 pounds ham.
30 pounds shoulders.
25 pounds thick sides.
21 pounds thin sides.
30 pounds lard.
40 pounds spare rib, head, feet, back bone.
18 pounds sausage.

POISONING DOGS.

Referring to an article on strychnine poisoning which appeared in a recent Cultivator, Mr. E. C. Rand, a breeder of Scotch collies and Berkshire hogs and who is located in Santa Rosa, writes the following advice:

"A dog can be made to vomit in less than two minutes by filling his mouth with a handful of common table salt and holding the mouth closed for 30 seconds. This I have tried a number of times and have found always certain.

"This may or may not be of interest to you, but I am writing it for the good 'man's best friend'."

The white breeds of swine are the Yorkshire, O. I. C., Chester White, Cheshire, Victoria and Suffolk. The black breeds are Poland China, Berkshire, Essex and Mulefoot. The red or sandy breeds are the Duroc Jersey and Tamworth. The very large breeds are the Yorkshire, Chester White, O. I. C. and Tamworths. The very small breeds are the Suffolk, Essex and Small Yorkshire. The other breeds, including the Berkshire, Poland China, Victoria, Duroc Jersey and Cheshire, stand between these extremes in the matter of size, but mature much quicker than the large breeds.—Kansas Farmer.

Teach the plow exercise as carefully as you do the sword exercise, and let the officers of troops of life be held as much gentlemen as the officers of troops of death.—Ruskin.

Profit in the Poultry Yard

Practical poultry people who may have ideas from their experience as to methods of feeding and housing and general care of poultry will confer a favor upon the Cultivator and its circle of readers by sending in concise accounts. Mrs. Basley is always willing to answer queries, which with the experience of others should make this a most valuable feature in poultry life on the Coast. Opinions or matters of a personal nature should be omitted, but a concise statement of facts is always valuable.

PTOMAINE POISONING.

Illness due to the eating of infected foods is very frequent and the account of it is invariably written up as "ptomaine poisoning." The term in this connection is not scientifically correct, as the poisoning from foods may or may not be from ptomaines. Illness from infected foods is far more frequent than is generally supposed. There is little doubt that many indefinite infections and disturbances of the intestinal tract, ordinarily termed errors in diet, are due to the indigestion of decayed or infected foods.

It is often difficult to establish the true course of food poisoning, though, of course, it is easier when the cases occur in large numbers. When but one or two cases occur in a private family, it is much more difficult to ascertain the true cause, and then only by means of the most painstaking investigation.

The poisonings from tin, leaden and copper receptacles are infrequent and in most cases are found to be due to bacteria. The more important of the food poisonings due to bacteria, often occurring in extensive outbreaks, are the following: meat poisoning, fish and shell fish poisoning, and poisoning through cheese, ice cream, puddings, potatoes and canned goods.

The most common form of meat poisoning is that from eating the meat of animals that were diseased at the time of slaughter. In this form of poisoning the bowels are principally affected, with symptoms of vomiting and diarrhea. It is well to remember in this connection, that most of the outbreaks of this kind of meat poisoning, have been traced to the meat of calves suffering from navel infection and diarrhea, or from cows that were slaughtered because they had been infected after calving or were suffering from some intestinal or udder infection. The germ of enteritis (bacillus enteritidis) is the organism responsible in this kind of poisoning.

Then there is the poisoning due to the eating of putrefied meat. This is usually associated with the bacillus proteus and bacillus coli. In this case we have symptoms of vomiting, headache, dysentery, weakness, convulsions, pains in the back and neck, and great depression.

The third kind of meat poisoning is commonly called "sausage poisoning," and is caused by the bacillus botulinus. In this kind of meat poisoning the symptoms are those referable to the central nervous system, muscular paralysis, double vision, dryness of the mouth and throat, disturbances of the heart action and respiration. There is no fever and consciousness is unimpaired. In the first two forms of meat poisoning the symptoms appear usually in from six to ten hours, while in sausage poisoning the symptoms do not appear for twenty-four hours or longer.—Geo. H. Glover, Colorado Agricultural College.

One breed is always better than a hodgepodge.

RUSSIAN MULBERRY FOR POULTRY.

The mulberry is an interesting fruit but little known to most people. The Russian Mulberry is very hardy and for this reason is more desirable for the middle and northern states than any other seedlings, therefore, the fruit of each tree varies somewhat, but in nearly every case it is an abundant bearer of fruit not over from three-fourths to one-half of an inch long. I have seen the fruit an inch long. It is an abundant bearer and bears in an early age. The fruit ripens and falls off daily, often continuing to ripen and fall for three or four weeks.

Poultry are very fond of the mulberry, and thrive on it. It is a well-shaped and attractive tree with attractive foliage. I advise every reader to have a few Russian Mulberries growing on his place, not only for its beauty and shade but for its fruit. Many people enjoy eating the fruit, and it may be made into pies and sauces where other berry fruit is scarce.—Green's Fruit Grower.

HEN HEALTH.

We are getting a good many letters from worried poultry raisers, and three-fourths of the trouble seems to be some form of roup. Of course it is hard to keep up with the work, but it's harder to make up what has been neglected. If the poultry houses were in winter shape, now, it would not be necessary to turn the fowls out of doors stormy, windy days, plenty of exercise could be furnished indoors, good health be easily maintained and the egg basket need not be quite empty.

Shelter, sunshine, exercise, dust-bath, clean water, a good bill of fare, are the best preventives of cold and roup we know of, and to furnish these is cheaper and easier than to cure. A disinfectant in the water, occasionally a dose of salts in a warm mash, are also helpful. Don't let the vermin sap the vitality of the fowls; keep them bright and active, make them work, and diseases of all kinds will find it a hard matter to secure a lodging place.—W. E. Vaplon, Poultryman, Colorado Agricultural College.

There are many waste products that could be turned to use as poultry food in every garden.

Eggs and fowls used in the home should be credited at market prices. This is only fair.

The necessity for fresh air has led to the great popularity of the open front houses.

The germ of disease must be destroyed before the disease can be eliminated.

Ducks have become one of the best paying propositions in the poultry industry.

Plenty of exercise and plenty of good fresh air are necessary for the health of the flock.

Air-slaked lime is a valuable disinfectant in the poultry house.

COULSON'S POULTRY FOOD MADE IN PETALUMA

IT TASTES
IT DOES
IT IS
GOOD

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DON'T THINK YOUR CHICKS WILL LIVE ON ANY THING. THEY WON'T.

DON'T THINK YOU MUST LOSE A CERTAIN LARGE PART OF THEM ANYWAY NO MATTER WHAT YOU DO. THIS IS A FALSE NOTION. IT HAS COST POULTRYMEN THOUSANDS OF DOLLARS AND SOME BELIEVE IT YET.

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has been used by successful poultry raisers for many seasons. They know what it will do. They know it is the best thing they can get for the little fellows.

Now What Will You Do?

If you have used our chick food, of course you will order again. If you have not used it in years past we suggest that you get acquainted with it and learn its value.

A sack will demonstrate that you have found the right food—a food that will put money in your pocket. It is made from selected grain, seeds, etc. Many valuable properties are combined.

For a good supply of eggs use COULSON'S EGG FOOD. It contains egg-making properties not found in any other food.

Our products are for sale by all reliable poultry supply houses.

Our book, "Poultry Feeding for Profit," may be had free. It is interesting and instructive. Send for a copy.

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White Leghorn—(Novice class)—Pen, Mrs. M. H. Dewey.

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Blue Andalusians—(Novice class)—Ck, 1, Mrs. H. W. Keith; hen, 1, Mrs. H. W. Keith.

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Houdans—Ck, 1, H. E. Allison; hen, 1, 2, H. E. Allison; pullet, 1, 2, H. E. Allison.

Black Spanish—Pen, 1, C. P. McAlmond.

Black Polish—Hen, 1, J. Z. Shelton.

Pit Games—Pen, 1, 2, Sealey & Tucker.

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Buff Orpingtons—All awards, J. D. Card.

Black Minorcas—Pen, 1, Mrs. M. A. Pilgrim; ck, 2, W. A. French.

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Buff Cochins—Ck, 1, 2, ckl, 3, hen, 1, 2, pullet, 1, Ben M. Woodhull; ckl, 1, 2, pullet 2, F. A. Arnold.

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Bronze—Ck, 1, A. Moncure; 2, W. H. Moore; 3, H. Tegrunde; hen, 1, 2, A. Moncure; 3, S. B. Onvett.

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DUCKS.

Muscovy—Old drake, W. G. Hoag; young drake, 1, young duck, 1, Mrs. F. A. Crum.

Pekin—Drake, 1, Mrs. William Pattison; 2, 3, Friesleben Estate Co.; duck, 1, J. H. Soper; 2, J. H. Leggett; 3, Mrs. William Pattison.

CALIFORNIA POULTRY SHOWS.

Napa.—Jan. 4-6, 1912. Napa County Poultry Association. Wallace-Rutherford, secretary.

Los Angeles.—January 4-10, 1912. Joseph E. Davis, Secretary, R. D. 1, Box 48, Los Angeles.

San Diego. — January 12-18, 1912. The Fanciers Club of San Diego. V. Davis, Secretary.

Rouen—All awards, W. A. French.

Rouen—(Novice class)—All awards, A. Moncure.

Indian Runner—All awards, A. P. Clayton.

Indian Runner—(Novice class)—All awards, Clyde Mastellar.

FRESNO AWARDS.

Fresno's most successful show was pulled off this year. The birds were at their proudest and the people most appreciative. A nice sum was left in the treasury after all was paid off. Likewise there is a spirit that next year's will be still bigger and better.

The awards were:

Barred Rocks—Pen, 1, 2, M. Bassett; 3, W. L. Kennedy; ck, 1, T. J. Simpson; 2, 3, M. Bassett; ckl, 1, H. H. Holland; 2, T. J. Simpson; 3, M. Bassett; hen, 1, H. H. Holland; 2, M. Bassett; 3, R. E. Wheeler; pullet, 1, G. L. Hanley; 2, T. J. Simpson; 3, M. Bassett.

Partridge Rocks—Ckl, 1, 2, R. E. Wheeler; pullet, 1, 2, R. E. Wheeler.

White Rocks—Pen, 1, R. Uhler; 2, Geo. Hensley; 3, Mrs. J. B. Hoehl; ck, 1, Geo. Hensley; 2, J. P. Sharp; 3, Mrs. J. B. Roehl; ckl, 1, C. O. Preston; 2, R. Uhler; 3, Geo. Hensley; hen, 1, R. Uhler; 2, Mrs. J. B. Roehl; 3, Mrs. E. F. Inns; pullet, 1, R. Uhler; 2, C. O. Preston; 3, R. B. Covington.

Buff Rocks—Pen, 1, Mrs. J. B. Roehl.

White Wyandottes—Pen, 1, F. H. Booth; ck, 1, H. E. Green; 2, F. H. Booth; 3, H. M. Leggett; ckl, 1, 2, F. H. Booth; 3, I. N. Ulsh; hen, 1, Leonard Stevens; 2, 3, F. H. Booth; pullet, 1, 2, 3, F. H. Booth.

Partridge Wyandottes — Cock, 1; hen, 1, 2; ckl, 1; pullet, 1, 2, L. Harp.

Silver Laced Wyandottes—Cock, 1; hen, 1; pullet, 1, I. N. Ulsh.

Columbian Wyandottes—Cock, 1; hen, 1; pullet, 1, Mrs. Leona Brophy.

Rhode Island Reds—Pen, 1, E. A. Sweet; 2, E. E. Hughes; ck, 1, I. N. Bryan; 2, Raymond Botts; 3, Fowler & Masterson; ckl, 1, H. E. Hill; 2, Raymond Botts; 3, Mrs. H. D. Hughson; hen, 1, Fowler & Masterson; 2, J. W. Porter; 3, G. W. Smith; pullet, 1, H. E. Hill; 2, 3, I. N. Bryan.

American Beauties—Cock, 1; hen, 1; ckl, 1; pullet, 1, Lindgren Brothers.

Buff Orpingtons—Pen, 1, Mrs. L. Brophy; 2, A. J. Olson; ck, 1, E. E. Hughes; 2, 3, Mrs. Leona Brophy; ckl, 1, Mrs. G. W. Hensley; 2, C. E. Futrell; 3, H. Thorpe; hen, 1, G. W. Donald; 2, 3, Mrs. L. Brophy; pullet, 1, E. E. Hughes; 2, 3, Mrs. L. Brophy.

Black Orpingtons—Pen, 1, Mrs. A. J. Olson; 2, G. L. Meadows; ck, 1, R. W. Harris; 2, G. L. Meadows; ckl, 1, 2, E. E. Bradley; hen, 1, E. E. Bradley; 2, R. W. Harris; 3, Chas. F. Holman; pullet, 1, E. F. Bradley; 2, G. L. Meadows; 3, R. W. Harris.

White Orpingtons—Pen, 1, T. E. Russel; 2, C. W. Hinrich; ckl, 1, 3, Mrs. A. D. Marshall; 2, R. B. Covington; hen, 1, 2, 3, Chas. F. Holman; pullet, 1, Mrs. A. D. Marshall; 2, R. B. Covington; 3, R. W. Harris.

Light Brahmas—Ckl, 1, Mrs. Nettie Stevens; pullet, 1, 2, Mrs. Nettie Stevens; pen, 1, E. P. Lewis.

Black Langshans—Pen, 1, E. J. Glibe; ckl, 1, H. E. Green; pullet, 1, 2, H. E. Green.

Cornish Indians—Pen, 1, M. A. Hill; ckl, 1, C. W. Kellogg; hen, 1, M. A. Hill; 2, Dr. C. W. Kellogg.

Brown Leghorns—Cock, 1, Fowler & Masterson; 2, E. F. Bradley; ckl, 1, Fowler & Masterson; 2, H. H. Holland; hen, 1, Fowler & Masterson; pullet, 1, Fowler & Masterson.

Buff Leghorns—Pen, 1; ck, 1; ckl, 1; hen, 2; pullet, 1, Lindgren; ckl, 2; hen, 1; pullet, 2, 3, G. L. Meadows.

White Leghorns—Pen, 1, J. J. Forney; 2, E. B. Rogers; 3, C. E. Hinrich; ck, 1, 2, E. B. Rogers; 3, John J. Forney; ckl, 1, 2, 3, John J. Forney; hen, 1, 2, 3, John F. Forney; pullet, 1, 2, 3, John F. Forney.

Black Minorcas—Pen, 1, L. S. Darling; 2, M. Bassett; 3, R. F. Mohns; ck, 1, A. W. Cowell; 2, 3, L. C. Darling; ckl, 1, A. W. Cowell; 2, L. C. Darling; 3, Mrs. E. F. Inns; hen, 1, A. W. Cowell; 2, L. C. Darling; 3, M. Basset; pullet, 1, M. Basset; 2, A. W. Cowell; 3, M. Bassett.

Buff Minorcas — Pen, 1, Lindgren Bros; ck, 1, Lindgren Bros; ckl, 1, Lindgren Bros; hen, 1, O. E. Palmer; 2, Lindgren Bros; pullet, 1, Lindgren Bros.

Mottled Anconas—Pen, 1, J. A. Benham; 2, T. B. Wren; 3, Dora Ross; ck, 1, O. E. Palmer; ckl, 1, Chas. F. Holman; 2, Chas. F. Holman; 3, J. A. Benham; hen, 1, 2, O. E. Palmer; pullet, 1, O. E. Palmer; 2, Mrs. Robt. Hamilton; 3, C. F. Hollman.

S. S. Hamburgs—Pen, 1, Henry E. Hill; ck, 1, Henry E. Hill; ckl, 1, 2, Henry E. Hill; pullet, 1, 2, Henry E. Hill.

Blue Andalusians—Pen, 1, G. L. Meadows; ck, 1, G. L. Meadows; hen, 1, G. L. Meadows; 2, G. L. Meadows.

Buff Bantam Cochin—Pen, 1, Mrs. R. J. Venn; 2, W. L. Kennedy; 3, Dr. C. W. Kellogg; hen, 1, W. L. Kennedy; pullet, 1, W. L. Kennedy.

Partridge Cochin Bantams—Ckl, 1, W. C. Kellogg; hen, 1, C. W. Kellogg; pullet, 1, C. W. Kellogg.

Black Cochin Bantams—Ckl, 1, C. W. Kellogg; hen, 1, C. W. Kellogg; pullet, 1, C. W. Kellogg.

Light Brahma Bantams—Ckl, 3, C. W. Kellogg; hen, 1, C. W. Kellogg; pullet, 1, C. W. Kellogg.

White Cochin Bantams—Pen, 1, C. W. Kellogg; ckl, 1, C. W. Kellogg.

White Polish Bantams—Ckl, 1, C. W. Kellogg; hen, 1, C. W. Kellogg.

Barred Rock Bantams—Ckl, 1, C. W. Kellogg; hen, 1, C. W. Kellogg.

R. C. White Bantams—Cock, 1, C. W. Kellogg; hen, 1, C. W. Kellogg.

Golden Sebright Bantams—Cock, 1, C. W. Kellogg; hen, 1, C. W. Kellogg; pullet, 1, C. W. Kellogg.

Silver Sebright Bontams—Cock, 1, C. O. Preston; ckl, 1, C. W. Kellogg; hen, 1, C. O. Preston; pullet, 1, C. W. Kellogg.

Black Tail Jap. Bantams—Ckl, 1, C. W. Kellogg; hen, 1, C. W. Kellogg.

Black Rose Comb Bantams—Ckl, 1, C. W. Kellogg; hen, 1, C. W. Kellogg; pullet, 1, C. W. Kellogg.

B. B. Red Game Bantams—Ckl, 1, C. W. Kellogg; hen, 1, C. W. Kellogg; pullet, 1, C. W. Kellogg.

White Jap. Bantams—Cock, 1, C. W. Kellogg; hen, 1, C. W. Kellogg; pullet, 1, C. W. Kellogg.

Dark Cornish Indian Bantams—Pen, 1, C. W. Kellogg.

White Silkies—Pen, 1, C. W. Kellogg.

White Guineas—Cock, 1, C. W. Kellogg; hen, 1, C. W. Kellogg.

Muscovy Ducks—Drakes, 1, E. B. Rogers; 2, E. B. Rogers.

Indian Runner Ducks—Drake, 1, W. C. Baldwin; 2, Geo. I. Hall; old duck, 1, Geo. I. Hall; 2, W. C. Baldwin; young duck, 1, W. C. Baldwin; 2, Geo. I. Hall; young drake, 1, W. C. Baldwin.

Mammoth Bronze Turkey—Cock, 1, H. H. Holland; 2, E. B. Rogers; ckl, 1, H. H. Holland; hen, 1, H. H. Holland; pullet, 1, H. H. Holland.

White Holland—Ckl, 1, R. E. Wheeler.

Partridge Cochins—Ckl, 1, C. W. Kellogg; pullet, 1, C. W. Kellogg.

PIGEONS.

Carneaux—White runts, 1, 2, 3, W. W. Ruschbauph; blue runts, 1, K. W. Ruschhaupt; 2, S. G. Bowen; 3, J. M. Hacock.

Record Homers—1, J. Luhdorff.

White Jacobins—1, C. W. Kellogg.

Long Faced Tumblers—1, C. W. Kellogg.

Red Pied Jacobins—1, C. Hanson.

Silver Runts—1, J. M. Hacock; 2, S. G. Bowen.

Yellow Parlor Tumblers—1, J. M. H.; 2, S. G. Bowen; 3, S. G. Bowen.

Blue Check Runts—1, J. M. Hacock.

Red Maltese Hens—1, J. M. Hacock.

White Maltese Hens—1, J. M. Hacock.

Belgian Carneux—1, 2, J. M. Hacock.

White Homers—1, J. M. Hacock.

White Fantail—1, J. M. Hacock.

Polish Lynx—1, J. M. Hacock.

Red English Pouters—1, J. M. Hacock.

White Dragoons—1, J. M. Hacock.

Red Dragoons—1, J. M. Hacock.

Yellow Crosses—1, J. M. Hacock.

Red Crosses—1, J. M. Hacock.

Blue Barred Crosses—1, J. M. Hacock.

Blue Check Crosses—1, J. M. Hacock.

Silver Check—1, J. M. Hacock.

Dunn Crosses—1, J. M. Hacock.

Red Carneaux—1, C. W. Kellogg; 2, J. H. Hacock; 3, James E. Long.

White Crosses—1, 2, S. G. Bowen; 3, J. M. Hacock.

THE CUP AWARDS.

The Sweepstakes Cup was awarded to G. L. Meadows of Hanford on a score of 30 points.

The cup for the best male in the show was awarded to T. J. Simpson, of Academy, Cal., on the 1st barred rock cock.

The cup for the best female in the show was awarded to John F. Forney of Kingsburg, on the 1st S. C. White Leghorn pullet.

The cup for the best amateur display was awarded to Dr. C. W. Kellogg, of Bakersfield.

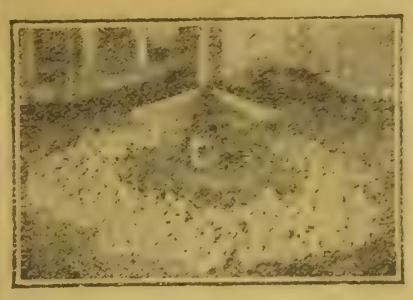
The cup for the best display of pigeons was awarded to J. M. Hacock of Fresno.

STOPPING THE CROW.

The city council of Los Angeles is contemplating the passage of an ordinance which will withhold the privilege of poultry keeping within the city limits. The agitation which has brought about the matter has been because of the fact that many poultrymen have been careless in regard to their neighbors' feelings and have not kept their yards in the best of condition, but, more than that, the desire to make Los Angeles a beautiful city and attractive to tourists, who are disturbed by the early crowing of the rooster. Of course it must be admitted that it is a strong factor to make every city attractive to tourists, but when it is considered that Los Angeles is some twenty-five or thirty miles long and takes in much farming community, it will be seen such a step would be foolhardy, but even with the closer-in sections poultry keeping should be permitted with proper restrictions. It is presumed the ordinance will not pass, but poultry people of the city are being urged to sign petitions to be presented to the council. One will be found at the Poultry Breeders Supply House, 845 South Spring Street, Los Angeles. It is now being signed by almost everyone to whom it is presented.

LOS ANGELES SHOW.

Southern California poultry breeders are preparing for a mammoth show at Fiesta Park, Los Angeles, Jan. 4-10. There will be seven specialty judges to place the awards. This is the last great try-out of the season and there is promise of a large contingent of best breeders from Northern California. That the show room will be taxed to its limit is certain by the number of inquiries already coming in. Not only chicken, water fowl, turkeys and specialties, but a big class of pigeons is anticipated. Several high-priced birds will be entered.



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is the best health-insurance you can furnish your fowls. Indispensable as a remedy for *Roup, Colds, Chicken-Pox*, and other poultry ailments. Disease in your flock now will probably mean diseased birds all winter and poor breeders in the spring. Germozone twice-a-week tones and builds up the system, destroys disease germs, insures better and healthier stock *now* and strong, vigorous birds for the breeding season. Best guarantee *against* disease; surest remedy if disease has already taken hold. *Either tablet or liquid. Price 50c.*

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POLAND CHINAS.
REAL BIG, SMOOTH TYPE

Sows and gilts bred to "Greenbacks," the great Ohio boar. Gilts sired by "Greenbacks" old enough to breed. Gilts sired by "Meddler Keep," the great Missouri boar, who was sired by "Master Meddler," said to be the greatest Poland China boar living. Serviceable young boars sired by "Greenbacks" and "Meddler Keep," and whose dams, "My Peerless Illinois Sows," are among the cream of the breed. Prices very reasonable.
GEO. A. SMITH, Corcoran, Cal.

For Sale—Registered Jersey cows, heifers and heifer calves and two bull calves. The young things are sired by Brown Lassie's Advocate 80,045. He is grandson of Diploma's Brown Lassie and a descendant of Brown Bessie. Merry Maiden, Ida Marigold and others of noted merit. The heifers should duplicate the work of their ancestors, being out of high testing dams.
Also a few choice Berkshires of both sexes. Write for prices and breeding; or, better come and see them. Geo. C. Dickson, National City, Cal.

For Sale—Wright Stock Belgian Hares. Will sacrifice for quick sale. For stock of choice thoroughbred at 20c per pound, all or a part. Also some up-to-date hutches. An easy and highly profitable business, with good market. Address J. E. Gregory, R. D. 6, Box 226, Los Angeles. Can be seen at Montebello.

We have now five choice young registered Holstein bulls for sale. Handsome fellows. Stock of our breeding won at the fairs all over the state. Juliana De Kol was champion at Sacramento. Most of these bulls are either sired by her brother or are out of her sisters. M. E. Sherman, Minnewawa Stock Farm, Fresno, Cal.

Grapewild Farm Herd of thoroughbred Berkshires. State fair prize winners. Boars and sows of all ages, unrelated. Address A. B. Humphrey, Mayhews, Sacramento, Co., Cal.

For Sale—Ten head Shorthorn bulls and Berkshire hogs from best strains in America. I won silver cup for best herd at California State Fair, 1911. H. L. Murphy, Perkins, Cal.

For Sale—Pure bred New Zealand and Belgian rabbits for breeding purposes. A-1 stock, prices right. W. G. Mattjetscheck, Banning, Cal.

For Sale—New Zealand and Belgian Hare breeding stock; extra fine, healthy. Los Angeles Rabbitry, Box 251, Inglewood, Cal.

Fine thoroughbred Berkshire boars and sows, subject to registry, for sale by Geo. Roeding, P. O. Box 1310, Fresno, Cal.

Belgian Hares—Fine healthy breeding stock for sale cheap. Write for your wants and prices. J. A. Reinhart, Hollister, Cal.

Berkshire boars, 5 months old, and young pigs ready to wean. R de Groot, Aptos, Cal.

WANTED

Local Representative Wanted—Splendid income assured right man to act as our representative after learning our business thoroughly by mail. Former experience unnecessary. All we require is honesty, ability, ambition and willingness to learn a lucrative business. No soliciting or traveling. This is an exceptional opportunity for a man in your section to get into a big paying business without capital and become independent for life. Write at once for full particulars. Address E. R. Marden, Pres. The National Co-Operative Real Estate Company, L 448, Marden Building, Washington, D. C.

Wanted—25 or 50 stands of bees or small apiary in good condition. W. Helfrich, Palmdale, Cal.

TREES

EUCALYPTUS TREES.
For Fall and Spring planting.
Best varieties, in any quantity desired, at lowest prices.
Special discount to nurserymen.
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Grafted Walnuts on Cal. Black Root—Franquette, Mayette, Concord, Placentia Perfection, San Jose Mayette, fine stock, true to name. Also Bartlett Pear, Imperial Prune, Apricot, and a complete line of other stock. Santa Clara Valley Nurseries, Gilroy, Cal.

Washington Navels and Valencias, 1 to 2 ft. high, 35 cents each. Two feet high and upwards, 50 cents each. Clean, thrifty stock; guaranteed free from pest or disease. Carroll B. Smith, Box 9, Redlands, Cal.

12,000 Eureka Lemon,
20,000 Washington Navel.
FRANK MORRIS,
Box 24, Covina, Cal.

For Sale—Four thousand Valencia and navel orange and Eureka lemon, one-year buds; also a large number of two-year-old trees. L. M. Netzley, Azusa. Phone 2170.

Fine Line of Navels, Valencias and Eureka Lemons for delivery spring of 1911. Contract now and get the first choice. The King Citrus Nurseries, Whittier, Cal.

Orange, Lemon and Grapefruit Trees, all first class stock. Special prices to parties planting groves. Edward A. Carvel, 144 Oak St., Glendale, Cal.

For First Class Valencia and Navel Orange Trees and Eureka Lemons, see A. G. Snow, Oxnard, Cal.

Eureka Lemon Trees, June buds, five-eighths and up, cheap. Geo. R. Stoner, Orange, Cal.

Capable young man wants place as manager or foreman on fruit ranch and stock. References. Box 61, Aptos, Cal.

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Have You a Cow?—Have you a creamery? Have you a cheese factory? Write us. Everything used in either a dairy, creamery, cheese factory, or for handling milk, cream, butter or cheese. We are in a position to quote you prices on entire creamery or cheese-making outfits. We make a specialty of only the latest and best sanitary machinery and supplies. Send us a list of what you want, and we will quote prices which we feel certain will interest you. O. F. Weber Co., 225-227 East Sixth St., Los Angeles, Cal.

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Large Dairy Ranch—
300 acres, 3 miles from railroad station, on main county road, telephone and R. F. D. route; 40 acres fine upland, covered by large ditch; 260 acres bottom land, the finest of sediment loam, 40 acres of which is in alfalfa, 70 acres more clear, 40 raising large crops of potatoes and corn, and is particularly adapted to the growth of Bartlett pears, and 30 acres of higher bottom, the finest of hay, almond or early potato land; 150 acres of fine timber, with 4000 to 5000 cords of wood, which is worth from $4 to $6 per cord. Improvements are the best in the Modesto District, consisting of fine 7-room house, 3 large barns, blacksmith shop, granary, tank house, chicken houses, corrals, etc. This property is all fenced and cross-fenced. There is included with this ranch 9 head of fine horses, 30 head of cattle, all farming tools and a large amount of good hay. This property is capable of great development as a dairy or fruit proposition, and offers the best opportunity today in Stanislaus County. Price $27,000; $10,000 cash, balance easy time. Write us today for full particulars.
PIONEER LAND COMPANY,
Modesto, Cal.

Alfalfa or Fruit Ranch—
200-acre river ranch, with good improvements, consisting of large ten-room house, big barn, granary, cabin, windmill, tank house, etc.; easily worth $5000. Within 2 miles of railroad station and school. 50 acres of fine loamy upland, raising large crops of grain; 150 acres of fine, level sediment loam bottom land, no coarse or drifting sand, free from noxious weeds or grasses. The very finest of peach, walnut, alfalfa, potato or corn land in Stanislaus County. 100 acres of this bottom land is in wheat and will yield from 15 to 25 sacks this year. 50 acres is covered with large, scattering oaks, free from underbrush, the wood of which is easily worth $3000. The bottom land faces on the river, making it an A-1 pumping proposition, and is well protected by high bluff from wind and frost. It affords today one of the most splendid opportunities in the state for a dairy or fruit proposition. For price and further particulars write Geo. E. Brinkerhoff, Box 185, Modesto, California.

WILL YOU BUY A HOME
In one of the best colony districts of the State? We have sold many 20-acre tracts in the last three weeks to people who have inspected the land, and they pronounce the land first class and the conditions ideal.
There is plenty of water, creamery, cannery, churches, schools and packing houses.
Close to 4 Railroad Stations.
We want the right people and will make terms to suit, and, if desired, will accept part of crop each year after first cash payment until land is entirely paid for.
ORCHARD AND FARM LANDS COMPANY, 309-310 Stimson Bldg., Los Angeles

For Sale—LINDSAY ORANGE LANDS.
Eleven days before Christmas the fourteen packing houses of Lindsay sent out pay checks for the 1910 navel orange crop. Lindsay orange district had the holiday orange market all to themselves, and of course they sold at good profit.
Why not invest in some of this Lindsay orange land and get the benefit of rapidly advancing prices?
Ten-acre tracts in Lindsay, $150 per acre, on easy terms.
Choice Tulare alfalfa lands, water in abundance; any size tracts, $50 per acre up.
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170 Acres—¼ mile from R.R. station and school, $30 per acre. 100 acres in crop; more can be planted to trees or vines. Partly warm citrus soil or for winter gardening; some alfalfa land; well 50 feet deep, 10 feet across, water 8 feet from surface; all under fence; no other improvements. Terms $3000 cash, balance at 7 per cent; will not trade. Address C. F. Haney, Escondido, Cal.

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THE ORANGE GROVE MAN.
Large list of orange groves in best districts. Seven years' experience in growing oranges.
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THE ORANGE GROVE MAN,
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For Sale—Near Lancaster, Cal. Bargains in improved and unimproved land. Also relinquishments for sale or trade. Some homestead land. A. S. Burnham, Box 451, Lancaster, Cal.

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Plants of all kinds, wholesale and retail, at Las Palmas Greenhouses, Palo Alto, Cal. Contracts solicited. Let us know your needs at once

Conifers balled, flowering acacias, potted eucalyptus, Rex begonias, small ferns. Wholesale, retail. Ballou's Nursery, Pasadena, Cal.

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WINDMILL OUTFITS.
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Another 1½-H.P. Fairbanks, $55; 2-H.P. Fairbanks, brand new, $59; 3-H.P. R. & V. engine, $69; 4-H.P. Stearns, $79; 6-H.P. Holly, $39; 18-H.P. Western, $450; 32-H.P. Fairbanks, $550; 40-H.P. Western, $600.
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No. 3 Byron Jackson vertical centrifugal pump, $75; double acting triplex and duplex pumps, cistern, hand and windmill force pumps.
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15 2000-gal. galvanized tanks, 3 3000-gal. galvanized tanks, 2 15,000-gal. galvanized tanks, and most all sizes in Redwood and Basswood tanks; some brand new and all at about ½ first price. We guarantee our tanks.
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Walking and riding plows; Fresno, slip and wheel scrapers; spike tooth and disc harrows, mowers, two-horse tree sprayer, weeder, Delaval cream separator, dry washer, fruit crusher.
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200 ft. 10-in. line pipe, fine for under ground, $16 takes the lot. 1800 ft. 1¼ galvanized, 5¾c.
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Outside shipments receive personal attention. Prices very lowest good, serviceable material can be furnished for. Get others' prices, then compare material and prices with us.
DEMMITT CO., 120 N. Main, Los Angeles.

Small Power Sprayer—New Dec. 1st; cost $150; price complete on wheels, $90; have two, will sell one; does excellent work; photo and description free. Myers, 658 South Hudson, Pasadena, Cal.

For Sale—60 H.P. Fairbanks-Morse gas engine with generator. Fine condition; also if desired, ten-inch Jackson centrifugal pump. Address Drawer H, Madera, Cal.

MISCELLANEOUS

For Sale or Exchange—5-passenger tourist, newly painted, engines and tires first class. Wind shield, 5 lamps, speedometer and register (ask anybody who has one), always running; $375 cash or trade for horses, hay, farm machinery. Must go immediately; owner going east; left with Demmitt Windmill Company, 120 North Main, Los Angeles.

Free—"Investing for Profit" Magazine. Send me your name and I will mail you this magazine absolutely free. Before you invest a dollar anywhere, get this magazine—it is worth $10 a copy to any man who intends to invest $5 or more per month. Tells how $1,000 can grow to $22,000; how to judge different classes of investments; the real power of your money. This magazine for six months free if you write today. H. L. Barber, Publisher, R. 430, 28 Jackson Boulevard, Chicago, Ill.

For Sale—All sizes; second-hand; screw pipe and casing from ½ inch to 13½ inch. We have this pipe in A-1 condition, ready for shipment and can give you any amount you want. Can save you big money on any kind of pipe you want to use. Don't fail to write or come and get our prices before you buy elsewhere. E. A. Clampitt, Los Angeles, Cal., cor. Lake Shore Ave. and Court St. Phones—M4863, Home 53022.

Grower to Consumer—Raisins in 50-lb. boxes. Sultanas, 6½c; Muscatels, 3-cr. at 5c, 2-cr. at 4½c. A. H. Dugdale, Etiwanda, Cal.

SEEDS AND PLANTS

Free—20 per cent in fresh package seeds, to introduce our goods, on all orders amounting to $2, and not over $5. Prices, Apples, 12½c; Pears, 30c; Roses, 30c, first grade 4 to 6 ft. trees, No. 1 Roses. We pay the freight. Medford Nursery Co., Medford, Oregon.

Citrus—150,000 sweet and sour seed bed stock, first class in every particular. Also one and two-year Eureka lemon, Washington Navel and Valencia nursery stock. C. W. Wilhite, Glendora, Cal. Home phone 2052.

Berry Plants and other good things for the garden and farm. My new catalogue is just out; send for it now. Louis F. Scribner, Pasadena, Cal.

California Black Walnuts for Seed—From the finest trees in state; large or small lots. Santa Clara Valley Nurseries, Gilroy, Cal.

Wanted—One-year-old Logan and Mammoth Blackberry plants. State quantity you can supply, with price. Address Fancher Creek Nurseries, Fresno, Cal.

Strawberry Plants—Jessie and Longworth, for sale, $3.00 per 1000, f. o. b. Ripon. Arthur Roberts, Ripon, San Joaquin County.

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Baby Chicks from my pure-bred stock, S. C. White Leghorns, carefully selected for laying and standard qualities. $9 per 100, $85 per 1000. As I use eggs for hatching from my own stock exclusively I can furnish healthy and strong chicks that will give best satisfaction. Hatching capacity 25,000 chicks per year. Eggs from the same stock $5 per 100, $45 per 1000. Correspondence solicited. J. R. Heinrich Poultry Yards, Arroyo Grande, Cal., San Luis Obispo County.

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If you want good White or Brown Leghorn day-old chicks or ten-weeks-old pullets, send your order, large or small, to Hausam & Gelatt, R. 6, San Jose, Cal.

Buff Wyandotte eggs for hatching, from prize-winning stock, after Jan. 1st. W. C. Parker, 113 Pacific Ave., Santa Cruz, Cal.

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Ring-Necked China Pheasants for sale. Pairs or breeding pen of four; also eggs for hatching during the spring season. Address T. D. Morris, Agua Caliente, Cal.

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MAMMOTH GOLDEN BRONZE TURKEYS. "International Tom," first prize and special prize turkey at the International Poultry Show, and said to be the largest turkey in the world, heads the flock. Young stock with large bone, long body, full breast, well marked and early maturing, for sale. Their mothers are from the leading prize-winning flocks of several Eastern states. I claim to own the best flock of turkeys on the Coast. Write soon, as orders are coming in fast. Prices very reasonable.
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For Sale—Mammoth Bronze turkey hens and toms, March, April and May hatch. Price from $3 to $6 each, according to age. Address Cypress Poultry Ranch, Anaheim, Cal.

For Sale—Mammoth Bronze turkeys, hens and toms; Eastern stock. Gobblers $10, hens $5, trio $18. Eggs for sale in season. Address John Carroll, Victorville, Cal.

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We have a few genuine "Rankin" strain Mammoth Pekin drakes to spare that will add a pound each to your next lot of ducks. Grand big fellows, fit to show. Price two to five dollars each. Eggs from our best pens, $10 per hundred, $2 setting. Long Beach Poultry Ranch, Long Beach, Cal

Imperial White Pekin Drakes, ten months old, $2 each. Booking orders for eggs, $1.50 per doz., $10 per hundred. H. Hinckley, Lincoln, Cal.

Five varieties of Ducks, four breeds of rabbits. Catalog free. Caldwell Bros., Los Angeles, Cal. Phone Glendale 421 R.

Indian Runner duck eggs from heavy laying, white egg stock, $1.50 per dozen. Mrs. Fred Chester, Santa Rosa, Route 2.

Indian Runner ducks for sale; eight months old; laying. Single birds, $2, six for $10. S. L. Lotman, Aptos, Cal.

Wanted—Indian Runner drakes, brown and white, not under 9 months. State price. Geissler, Coachella, Cal.

Choice Indian Runner ducks. Special holiday sale. In lots to suit. E. R. Fulkerson, Claremont Farm, Galt, Cal.

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Veterinary

Answers in this column by Fred G. Matthews, M. S., D. V. M., 1232 Central Ave., Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Urinary Trouble.

A gelding six years old has urinary disorder. Urine is passed eight or ten times a day. The color varies—brownish white and sometimes clear. A lump has appeared on the left side over the floating ribs. The horse has been in this condition four or five weeks and has lost a little flesh. He seems irritable, but does not appear to suffer pain.—Subscriber, Van Nuys.

Chronic inflammation of the kidneys is indicated. Clip the hair from the region enlarged and apply a mustard plaster. Repeat once each week. Have sixteen powders prepared, each containing nux vomica ½ drachm, potassium iodide ½ drachm, and sodium bicarbonate 1 drachm, and give one powder twice daily in the feed. Allow the horse laxative foods—green grass, roots, etc. Beet pulp is said to be excellent.—F. G. M.

Agricultural Notes

Because of dry weather irrigation districts of Bombay, India, are compelled to restrict use of water.

Sugar planters of Trinidad are fearing great havoc because of the palm weevil which has now begun to infest the stalks of sugar cane.

The sale of American condensed milk is decreasing in Manchuria. It is claimed the loss is due to the introduction of a Swiss product.

To secure permission to exploit any of the resoruces of Mexico a concession must first be secured through application to the department of Fomento at Mexico City.

An effort is being made in New York to consolidate a large number of concerns engaged in the manufacture of glucose. It will have a capitalization of ten million dollars.

A great blow has been given to the meat packers trust because of the refusal of England to receive bids during the time the United States Government prosecutions are under way.

Next to ordinary Indian corn, the principal crop in Natal, South Africa, is sugar cane. The output for 1910 was 82,000 long tons of sugar. The industry is increasing rapidly.

The sugar industry is increasing rapidly in the Philippines. In the Pangasinan Province the production increased from 20,000 in 1909 to 30,000 in 1910, and an estimate of 60,000 for the present year is made.

The increase in the rubber production in British India is indicated by the report from one district that for ten months of 1911 it produced 117,933 lbs. as against 22,000 lbs. for the same period of 1910.

The International Harvester Company has established a branch agricultural implement factory at Lubertsy, Russia. Owing to the great number of holidays in Russia the factory can only put in 260 full working days in a year.

Wool shipments from Argentine ports from October 1, 1910, to September 30, 1911, totaled 433,251 bales, of which 30,071 went to the United States, and from Montevideo 101,122 bales, of which 718 bales went to the United States. The total shipments were 65,257 bales greater than in the same period the previous year.

On December 1 the rates for parcels sent from the United Kingdom to the United States were reduced to the following: Up to 3 pounds, 1s. 3d., or 30 cents; up to 7 pounds, 2s. 3d., or 55 cents; up to 11 pounds, 3s. 3d., or 79 cents. The former rates were: Up to 3 pounds, 36 cents; up to 7 pounds, 60 cents; up to 9 pounds, 84 cents; up to 11 pounds, $1.08. The rate on parcels from this country to the United Kingdom remains the same, i.e., 12 cents a pound.

The imports of opium at Tientsin, China, during 1910 were only 5,733 lbs. as against 20,266 for the preceding year. The culture of the opium poppy has been entirely suppressed in North China through the energetic action of Chinese authorities. Every opium smoker must take out a license and register his name and state the amount of the drug he consumes per day. If he purchases to exceed this amount he and the seller of the opium are fined fifty times the value of the excess.

That Porto Rico is not suffering from "hard times" is evidenced from enthusiastic reports received from that island. The wave of progress that struck the country in 1910 has been on the increase. The country is strictly agricultural and sugar, coffee, tobacco and fruits make up the bulk of its products. Of these all coffee showed an increase in 1911. The sugar production showed a gain of 13 per cent for the year and the exports of this commodity amounted to about $25,000,000. The exports of sugar increased from 70,000 tons in 1901 to 323,000 tons in 1911.

Regarding the guano deposits of the Mexican west coast, Consul Edwards of Acapulco reports: Along the coast of Guerrero the guano deposits are considered insignificant, consisting solely of scattered rocks widely separated and which afford resting places for sea fowl. Near San Blas, about 150 miles north of Acapulco, I have seen at a considerable distance from shore rocks of great magnitude covered to a great depth with guano, and was informed that still farther north and along the Gulf coast guano in considerable, though not commercial, quantities might be found. I have been told, also, by a gentleman who himself made the explorations, that within less than 100 miles from Acapulco, but on the other side of the Sierra Madre mountains, there exist numerous extensive caves, into one of which he penetrated nearly two miles and in which there were great deposits of guano. Off this coast is Clipperton Island, upon which the largest deposits of guano are said to exist, but these at present are covered by a concession from the Mexican government.

GARDEN HELPS.

Geo. P. Hall, for years practical gardener and all-around farmer, with more or less experience in writing for the papers, and at the present time president and booster of the Little Landers Colony at San Ysidro near San Diego, has issued a book of 120 pages chock full of garden helps, in fact, "Garden Helps" is its name. Wm. E. Smythe, also of the Little Landers Colony, gives a foreword as to the author, after which the author plunges directly into his subject, taking up the subject of soil and its formation, classification, substance, etc., after which comes planting, with tables, discussion as to environment, etc. of crops, later a list of vegetables with specific instructions as to planting. Aromatic and medicinal herbs are treated, as are flowering plants and shrubs. An appendix with useful information of various kinds is added. It's a valuable little book and entirely from a California standpoint.

POTATO CULTURE.

The A. I. Root Co. of Medina, O., has just issued "ABC of Potato Culture." It treats of how to grow spuds in largest quantity, finest quality, with the least expenditure of time and labor. The book considers the latest improvements in cultural implements. The book is dedicated to "Boys and girls, men and women and even to old people like myself (A. I. Root) who are sometimes obliged to wear spectacles to distinguish weeds from beneficial plants." The book is in fact the second edition, the first having been issued in 1901. It treats practically all sides of potato culture through plowing and harrowing the ground, selection and preparation of the seed, prevention of diseases, culture and harvesting, storing, sorting and sprouting and methods of marketing.

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Fig Trees Either Calimyrna, White Adriatic or Black Mission
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We have a stock of two-year-old Valencia Lates, Washington Navels, Tangerines and Naveleneias budded on this stock, and which we will trade for real estate, or a second-hand small runabout automobile. Will be glad to give prices and particulars on request. In writing kindly state what you have to offer, with price, and oblige. All correspondence cheerfully answered.

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Questions and Answers

THE EDITOR AND STAFF

Plants Under the Oak.

What flowers will grow under a large live oak tree on west side of house where it has plenty of wind and shade, little sun, soil gravelly.—Subscriber, San Martin.

Unless you have plenty of water it will be hard to make any shrub or flower do well under the conditions you name. There are many shade-loving plants. In bulbs we may mention callas, ferns and montbretias. An annual is cineraria, very showy, and will bloom practically all the summer through. Cassia Artemisioides will give fine results under your conditions. Then there is the columbine, digitalis, Wandering Jew and periwinkle. The last two named will stand the most drought of any, even going a couple of months without water, but of course their foliage is brighter if given an abundance of water. It must be borne in mind that a large live oak tree will soon exhaust all the moisture of the soil unless it is continually supplied.

Fruits in Owens Valley.

What kind of peaches, cherries and grapes do best in Owens Valley? Also will Thompson seedless grapes succeed?—Subscriber, Salinas.

Mr. George C. Roeding of Fresno has recently been all over the Owens River Valley so we appealed to him for help for we know he went especially to determine as to possibilities of that section from a horticultural standpoint. He writes:

"It is only a short time ago that I made a trip into the Owens River Valley for the purpose of seeing the country and to determine for myself just what its possibilities were from a horticultural standpoint. It is not necessary for me to go into detail as to the best varieties of peaches and cherries, for that matter, because in my opinion all the commercial sorts which grow in other sections of the state will do well there. Much of this land is unusually fertile and this in conjunction with their cheap water which is located on the lands at almost a nominal figure, should place this section in an advantageous position for the production of many varieties of fruits, including many varieties of berries, which cannot be grown in the warmer sections of California. The berries which I refer to particularly, which will not grow in the interior valleys, are currants and gooseberries. I have every reason to believe that this section will grow very fine strawberries, raspberries, blackberries, all of which on account of their late spring, would supply a market when all the berries from the warmer sections of the state would be out of the market.

I would not have believed, had I not visited the locality, that grapes could be grown there to advantage. I was very much surprised to find at both Independence and Bishop, such varieties of grapes as Malaga, Muscat, Rose of Peru, Flame Tokay, Thompson Seedless, not only growing well, but producing fruit of the very highest quality. I was under the impression that the winters were far too cold for the cultivation of the vinifera types, which I have just mentioned, but I saw vines that were from six to fifteen years old, and although they have not had the care they should have had, they were nevertheless doing well and producing abundant crops of fruits.

In the matter of apples and pears I do not hesitate to say that the Owe River Valley, particularly that secti where the soil conditions are s. able, will produce these fruits n for 100, ing in the greatest abundance but ur- very finest quality. I do not wi ity imply that all the lands of this va he are of the very best grade, as there quite a long stretch of alkali in t lower section, nevertheless there a thousands of acres of fine land whic will eventually develop into a ver extensive fruit section.

Lime on Manure.

Is air slaked lime beneficial for hen manure or horse manure? Is it a good practice to scatter over the pile at different times? For what does hen manure sell in Southern California?—Subscriber, Ventura.

Air slaked lime may be beneficial on soil after application of manure or it is good to assist in decomposition, but its use is liable to liberate the gases in the manure so as to result in loss unless care is exercised in the use of absorbents, and in keeping moisture present. We do not know that any established price obtains as to hen manure, but have known of some selling between $5 and $6 per ton.

Sending Potatoes to Foreign Countries.

Is there any law in California or the United States which prevents sending potato seed to foreign countries?—Subscriber, Santa Barbara?

We have never heard of any restrictions and cannot see wherein there should be any point raised. If any question should come it would be as to the foreign country. Almost every civilized country excepting the United States, has very rigid quarantine laws and probably your potatoes will have to stand inspection at the port of entry.

Chicken Pox.

I am at my wits' end what to do with my chickens. There are six or seven hens that have one eye sore; it festers and the hen gets blind in that eye. At first I though it might be the old disease called Swell head, but now I am sure it is not that because they have a good appetite and do not seem sick at all. Could you send me any remedy? Do you think it is any disease, and should I keep those hens separate from the others? Please let me hear through the Cultivator because I am a subscriber.—Vina.

It is chicken pox and the best cure is to grease the sore places with carbolic salve, or carbolated vaseline. Give the hens a little sulphur in their food, about a quarter of a teaspoon for each hen for a week, and feed them nourishing and easily digested food. I find that bread and milk is the best. The disease is very infectious so keep the sick separate from the others. Chicken pox is fatal with little chicks but not generally with hens, but it will prevent their laying The henneries and yards should be disinfected and kept very clean, as the germs of this and other diseases propagate in dirt.—Mrs. A. B.

Alkali Resistant Fruits.

What fruit, grapes or deciduous, will do best in alkali land? Will apricots grow in alkali? Is there any stock on which apricots may be budded which will do well in alkali?—Subscriber, Laton.

As our subscriber does not give the amount of alkali it is impossible to

answer definitely, but we may say that he California Experiment Station has ermined that the greatest amount total salts in the first three feet of in which grape vines were found show no injury was 0.3 per cent, d of this one-fifth was carbonates black alkali. When the total was 0.5 to 0.6 per cent in the three feet and carbonates d the half of it, vines were d. In any case raisin grapes, in ich highest content of sugar is de- ed, should not be grown in alkali ils. As to the effect upon trees: It impossible to say, for the reason at so much depends upon subsoil nditions. In a general way we may y that nearly all fruit trees are in- ired by standing water, and it is usu- lly characteristic of alkali soils that the water table is high. Injury which has been observed in alkali lands may have been from the presence of the salt in the land or from the water. As to tolerance of alkali, the date palm will probably stand the most of any fruit. Other fruits in order would be pomegranate, pear, quince, olive, fig, apple, almond, peach, prune, orange and lemon. As the apricot is usually on the peach root or in heavy moist soils on the Myrobalan plum root, it should be observed that these fruits are the least tolerant of any.

Fertilizer in Tree Holes.

Is it wise to place fertilizer in holes at time of planting trees, and what kind is best?—Subscriber, Laton.

We would not put any fertilizer in the holes. If near the young rootlets it might do injury, and in any case the soil is usually rich enough to enable the tree to get its start. After the dirt is fairly well filled in so as to be above all the finer roots, then it might be wise to put in some of the higher grade commercial fertilizers, and then as the dirt is left hollowed out around the tree of course stable manure as a mulch is very desirable. In placing mulch around trees, however, care must be observed to prevent a thick pile of coarse strawy manure against the trunk of the tree. It has been known to heat and destroy the bark of young trees.

Bitter Almonds.

Where may I secure bitter almonds? —Subscriber, Auburn.

Can any of our subscribers inform us on this point?

Olive Questions.

What is the best soil for olives? How old are they before beginning to bear? Which is the best variety for pickles, also for oil? Are there any diseases known to the olive? Why are they not more extensively planted?—H. Calpella.

The best soil is a sandy or gravelly loam with good subsoil drainage. The olive does not like wet feet. Will often bear some fruit at three or four years, and of course increasing from that on. The most common variety is the Mission, and is excellent for either pickles or oil. See articles by Dr. Coit, Mr. Tofanelli and others in last week's ssue. Yes, there are troubles with he olive, as with practically all other ruit trees. The black scale infests in most sections. In the interior valleys, where greater summer heat obtains, the scale is less objectionable. One reason why they are not more extensively planted this year is that the trees cannot be secured. A large planter from the Sacramento Valley recently made a trip to Southern California, visiting almost every nursery in order to secure more trees.

Interior Rot of Potato.

What is the cause of black interior rot infesting potatoes in this section? —Subscriber, Cucamonga.

This was referred to Professor Ralph E. Smith, who had no further information as to conditions than given above. He writes:

"We do not know the cause of the internal black rot of potatoes, referred to in your letter. I presume that what you refer to is a disease which we now have under investigation in the northern part of the state. We made an extensive fertilizer experiment along this line during the past season, but did not seem to get much effect from various fertilizers on the prevalence of the trouble. I cannot, of course, be positive that this is the same disease which you have in mind. It would be well for you to send us specimens if possible."

Seedless Valencias.

Is a seedless Valencia common? I have one in my orchard which is now bearing an entirely seedless orange. The fruit is all one could wish in size and flavor and is thin skinned. So far as I can learn, such fruit is very rare.—Subscriber, Globe.

We will ask our subscribers to give of their experience in regard to seedless Valencias. We have seen them, but whether a freak or the regular fruit from certain trees, we are not informed.

Pumping Gas.

Is there a pump which will successfully lift water containing natural gas? Has the pumping of such water been successfully done?—Subscriber, Corcoran.

We believe the only way is a more powerful pump which will overcome the loss which water generating gas occasions. We will be glad to hear from our subscribers who have had experience along this line.

Poisoning Gophers.

Please give remedy for destruction of gophers. They have gained possession of the place, so that I fear trapping is too slow. They have taken several two year old apple trees recently. Am over the orchard frequently in cultivating, and would like to use poison if it is successful.—J. H., Newberg, Oregon.

If they are already taking trees, we would prefer the traps until brought under control. One man with a few dozen traps gets action quicker than any other way. However, poisoning with strychnine is preferred by some where the area is large. Raisins or pieces of small potatoes will usually do the trick. If big fat raisins are chosen, split them open and put a very small amount of strychnine in the center of each, close together, open up the runway and deposit two or three raisins or pieces of potato in which the poison has been placed, then close up the opening made. If the main runway is opened so that it is cut in two, the poison should be put in both ends. Some prefer the poisoned wheat, the same as is prepared for squirrels.

Citrus Trees From Cuttings.

Can orange and lemon trees be grown from cuttings?—Subscriber, Modesto.

They can. Some of the largest lemon trees in California are at San Fernando, Los Angeles County, and were started from cuttings nearly thirty years ago. Oranges will not root quite so readily as the lemons. It is not generally understood that a great many trees not ordinarily propagated from cuttings will form roots and grow from the cuttings. Plums, apricots, eucalyptus and many others are in this class.

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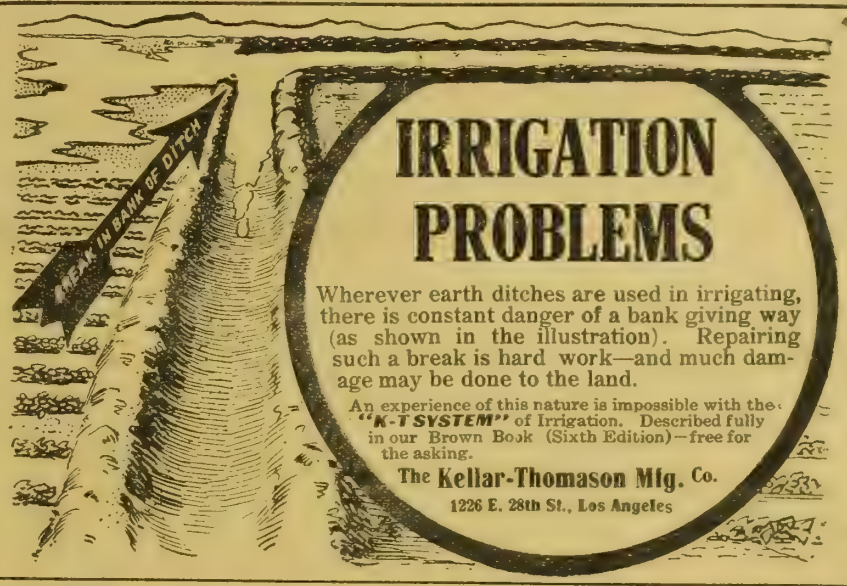

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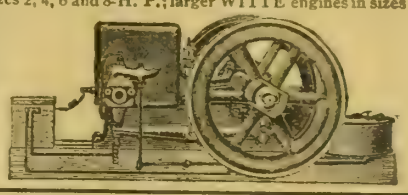

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San Francisco-Los Angeles Produce Markets

Los Angeles Market

LOS ANGELES, Dec. 27, 1911.

Butter.

Butter has taken another advance, gaining four points during the week.

Prices to trade 2½c in advance of the following Produce Exchange quotations:

Extras	36½
Firsts	32½
Ladles	25
Country	23

Cheese.

Local Anchor	16
Oregon Daisy	18@18½
Northern Fresh	17½
Domestic Swiss	18
Imported Swiss	33

Eggs and Poultry.

Eggs declined four cents on both extras and case counts. Receipts are larger, and a general easy tone prevails.

Buying prices f. o. b. Los Angeles are:

Local Ranch Candled	39
Case Count	35
Eastern Storage	28@30
Pullets	26

Dealers pay for live poultry f. o. b.:

Hens, lb	12@15
Roosters	6
Broilers	22
Fryers	15
Roasters	15
Turkeys	18@20
Ducks	14
Geese	14
Guinea Hens, doz	4.00
Squabs, doz	1.75

Live Stock.

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs	6¾
Prime Steers	6
Heifers	6
Calves, lb	6½
Sheep, Ewes, head	4.75
Lambs, head	3.75@4.25
Wethers	5.00@5.60

Potatoes.

Wholesale prices are:

Sweets, Yellow, cental	2.50@2.75
Highlands, cental	1.60@1.85
Salinas	2.00@2.10
Lompoc	2.00@2.10
Oregons	2.10@2.25
Oregon Early Wonder	2.40@2.50

Onions.

Wholesale quotations:

Australian Brown, Northern, ctl	1.90
Yellow Danvers, Northern, ctl	1.90
White Wax	3.50
Nevadas	2.25@2.50
Garlic	7@8

Vegetables.

Artichokes, Northern, doz	90@1.00
Beets, doz bunches	40
Bell Peppers, lb	9@10
Brussels Sprouts, lb	10
Beans, Limas	10@12
Beans, Wax	10@12
Beans, Green	10@12
Chilis, Green	7@8
Chilis, Red	15@16
Cucumbers, Hothouse	75@1.50
Cabbage, sack	90
Cabbage, Red, lb	3@3½
Cauliflower, crate	1.25@1.50
Celery, crate	3.50@4.00
Carrots, sack	1.00
Egg Plant	8@10
Horseradish, lb	13½
Onions, Green, doz bunches	15@20
Kohl-rabi, doz bunches	40
Leeks, doz	40
Lettuce, crate	1.25@1.50
Mushrooms, lb	50@1.00
Oyster Plant	15@20
[illegible]	10
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

Feed Stuff.

Alfalfa Meal	15.00@17.00
Bran, ton	26.00@27.00
Feed Cornmeal, ton	38.00@39.00
Cracked Corn	38.00@39.00
Rolled Barley, ton	38.00@39.00
Rolled Oats, ton	35.50@36.50
Middlings	32.00@34.00
Oilcake Meal	42.00@43.50
Cocoanut Cake, ton	24.00@25.00
Mixed Feed, ton	25.00@27.00
Shorts	26.00@28.00

Citrus Fruit Market

LOS ANGELES, Dec. 27, 1911.

The lull following the Christmas demand has tended to weaken the orange market. In addition, some fruit has gone forward hardly colored sufficiently, and this has sold rather low. Fully colored and sweet stock is still commanding good returns. The quietness will probably continue until the January trade opens. What the effect of the cold weather will be it is impossible at this time to say. Surely the damage is great, but if greatest care is observed in keeping injured fruit out of the market, the season may continue with good returns.

The lemon market continues indifferent, with prices about the same as the last three weeks. Stored lemons will now be held until higher prices obtain, for the simple reason that the cold weather has taken off every young lemon which would make next summer and fall crop.

Shipments.

Shipments of oranges since Nov. 1, 1911, from Southern California, 1,172 cars; lemons, 711; total, 1,883. To same date last year: Oranges, 3,172 cars; lemons, 666; total, 3,838. Tulare County up to the 25th: Oranges, 2,727 cars; lemons, 68; total, 2,795 cars. Butte County, 460 cars oranges.

NEW YORK, Dec. 26.—Twenty-two cars Navels, six cars lemons sold. Market lower on Navels, easier on lemons—300s size. Cloudy.

Navels.	Avge.
Winterhaven, fy, Stewart F	$2.95
Vista de Robles, Stewart F	3.25
Niagara, Stewart F	2.75
Vista de Robles, Stewart F	2.35
Camellia, xf, Red. M. O. A	3.15
Mutual, Red, M. O. A	2.80
Pioneer Special, Pioneer F	3.05
Woodland, imp., Pac. Pack. Co	2.30
Woodland, Pac. Pack. Co	2.35
Silver Star, imp., Pac. Pack. Co	2.25
Kaweah Chief	3.70
Gold Buckle, R. H., E. High	3.35
Golden State, Cen. Cal	3.55
Squirrel, imp., A. H. Ex	2.85
Victoria, A. H. Ex	2.70
Lincoln, A. H. Ex	2.40
Navajo, A. H. Ex	2.15
Craigynos, Cen. Cal	3.30
Forgetmenot, T. C. C. Ex	3.20
Bear & Eagle, T. C. C. Ex	2.50
Forgetmenot, T. C. C. Ex	3.10
Homer, Q. C., Corona	2.60
Sunnyslope, fy, Randolph F. Co	2.85
Mariposa, O'Neill F. Co	3.40
Mariposa, O'Neill F. Co	3.15
Tangerines—Halves.	**Avge.**
Heart	$1.85
Lemons.	**Avge.**
Ind., fy	$2.80
Choice	2.45
Pet	2.80
Greyhound	2.60
Whittier	2.80
Quail	2.75
Coyote	2.60
Club	2.35
Watchumna	2.50

BOSTON, Dec. 26.—Ten cars sold. Cool, cloudy. Market easier on oranges; doing better on lemons.

Navels.	Avge.
Pocahontas, T. C. C., Zante	$2.60
Venus, E. Peycke Co	2.35
Hollywreath, fy, O'Neill F. Co	2.30
Venus, E. Peycke Co	2.15
Golden State, Cen. Cal., L. C	2.80
Craigynos, Cen. Cal., Lindsay	2.75
Preferred Stock, xf, G.N.O.G.A	2.30
Niagara, Stewart F	2.25
Lemons.	**Avge.**
Pet, S. A. Ex	$3.00
Greyhound, S. A. Ex	2.55

PHILADELPHIA, Dec. 26.—Two cars Navels, one car lemons sold. Also twenty cars Floridas. Oranges sold from $1.25 to $3.10; average, $2.15. Grapefruit, $2.20 to $5.30; average, $4.10.

Navels.	Avge.
Craigynos, Cen. Cal., Lindsay	$2.85
Mariposa, O'Neill F	2.65
Lemons.	**Avge.**
Lemons, Q. C., Corona	$2.75
Family, Q. C., Corona	2.30

PITTSBURG, Dec. 26.—Six cars sold. Market lower on oranges; steady on lemons. Cloudy.

Navels.	Avge.
Golden Orchard, fy, Ind. F. Co	$2.60
Birch Bark	2.65
Manzanita, S. T., Fullerton	2.10
Violet, D. M., Monrovia	2.60
Sentinel, Cen. Cal., Lindsay	2.35
Freedom, Ind. F. Co	2.20
Argonaut, S. T., Fullerton	2.10
Iris, D. M., Monrovia	2.80
Jasmine, D. M., Monrovia	2.50
Lemons.	**Avge.**
Quail, O. K. Ex	$3.05
Blue Jay, O. K. Ex	1.85
Coyote, O. K. Ex	2.80

NEW YORK, Dec. 22.—Five cars navels, one car lemons sold. Market slightly higher on oranges and lemons. Raining.

Navels.

Avge.

PHILADELPHIA, Dec. 22.—No California citrus fruit sold. Offering today consisted of sixteen cars Floridas. Oranges sold from $1.30 to $2.75; average, $1.90. Grapefruit, $1.60 to $5.05; average, $3.95. Market easier. Next sale Tuesday.

CINCINNATI, Dec. 22.—Cool, raining. Market adavncing on lemons, declining on Floridas. One car lemons sold; also six cars Floridas. Floridas sold from $1.20 to $2.55.

CLEVELAND, Dec. 22.—Five cars navels, one car lemons sold. Market declining. Raining.

Navels.

BOSTON, Dec. 22.—Four cars sold. Cool, cloudy. Market unchanged.

ST. LOUIS, Dec. 22.—Cool, cloudy. Market weak on navels and lemons. Four cars sold.

PITTSBURG, Dec. 22.—Five cars sold. Market declining on oranges. Weak on lemons. Cool.

Navels.

LOS ANGELES, Dec. 22.—Four cars navels sold.

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Household Department

THE OLD AND THE NEW YEAR.

The grand Old Year is dying,
His hour has come at last;
His brilliant reign is ended,
Its golden days are past.
He shakes the wreath that, withered,
Lies cold upon his brow;
His breath is quick and labored,
His eyes are closing now.

The grand Old Year is dying,
He bids the world good-night;
A starry veil is lifted
That parts him from our sight.
A sigh of deepest feeling,
A tear, and then a smile,
For scenes of rarest pleasure
Our lonely hearts beguile.

Behold, the New Year cometh!
His face is young and fair;
The merry bells are ringing,
There's music everywhere.
Oh, happy, happy greeting!
Oh, happy, happy day,
That lights our path before us
And laughs our cares away!

—Fanny Crosby.

A NEW YEAR'S WISH.

I wish you a happy New Year! May
roses strew your way,
And paths be glad and peaceful on
which you start today.
May golden shafts of sunshine bring
just a little rain,
And gracious gifts of pleasure hold
just a shade of pain.
For skies are fairer which the clouds
may sometimes overcast,
And pleasures are the best which come
when grief and pain are past.
And if among your roses the ivy is entwined,
Your heart will beat the nearer to the
heart of all mankind.

I wish you a happy New Year! Ah!
who could wish you less?
May all the tender charities that heal
and soothe and bless
Be scattered at your feet like flowers,
and may you e'er impart
To all the weary souls of men the joy
within your heart.
For hearts that hold no love know not
the joy it is to live.
Our lives are measured by the joys
which we to others give.
May charity and kindness your life and
mine imbue,
My joys shall be the brighter for the
joys I wish to you.

—Anon.

TWO SLICES OF MINCE PIE AND A CUP OF MILK.

By Dr. F. A. Blanck.

This is a confession on the part of Mrs. Baxter, and she permits me to tell the story on herself. Running over some old memoranda in my notebook, the other day, I came on the notation:

"Americanus Poisonatus Feminitis—Baxter."

This made me think of Mrs. Baxter just as an average patient of mine in those days, and I laughed.

It was five years ago that Baxter, meeting me on the street one morning, said:

"I don't discredit your skill, doctor, but Mrs. Baxter is a very sick woman, and I'm going to send her to the mountains this summer to see if she can't recover. I hate to do it, for times are dull and I haven't the money to spare."

"See here, Baxter," I replied, "I've been treating your wife [illegible] for a weak heart as [illegible] has any [illegible] ha[illegible] under my care [illegible] had the full truth from her. She has never told me about herself, and when a physician doesn't get that he's at sea. Now you've put me on my mettle and I'll make you this proposition: I'll cure Mrs. Baxter in a week for half the money it will cost you to send her to the mountains; or if I fail I'll pay half of her expenses there. Is it a bargain?"

He pumped my hand up and down and said it was.

"We will begin right now, and you are to answer questions which Mrs. B. always dodges when I put them to her. Question number one:

"'What did you have for dinner yesterday noon?'"

"Roast beef, potatoes, beans, coffee, hot mince pie," he said, quite mixed as to what I was driving at.

"Humph! Hot mince pie! How did Mrs. B. spend the afternoon?"

"She told me she lay down right after dinner until the children came home from school, because she felt sleepy."

"I should think she would! I wonder she ever woke up again. What did you have for supper?"

"Hash, scrambled eggs, cold beef, coffee and cold mince pie."

"Fine—that's excellent! Wonder I wasn't invited in. How did you spend the evening?"

"We called on the Bakers and stayed there until ten, when we came home."

"And then?"

"Nothing—we went to bed."

"No lunch before retiring?"

"Why, I believe Mrs. B. did finish the mince pie and drink a cup of milk. There were two slices of pie left over from supper."

"And when was she taken sick?"

"At two the next morning—cramps, a griping and fluttering sensation about the heart and a feeling of faintness. I worked over her until daybreak, when she fell asleep. Her heart is in a very bad condition."

"Pardon my bluntness, Baxter, but shut up about her heart. I'll call on her as soon as I have finished my office work."

Baxter moved on and I went to my office to laugh. I had finally discovered the secret of Mrs. B.'s heart. Long had been my suspicions, but never a word of confirmation had come from her. As soon as I could, I wrote out a prescription in plain English, tucked it in my book, and hastened to the Baxter home to find Mrs. B. pale and complaining sadly of the certainty of sudden death from heart failure.

When she had finished, I said to her:

"Mrs. Baxter, I'm going to give up your case today and let some other physician care for you. Don't look surprised—we will be friends, but your malady is too mysterious for my skill. I freely admit that. But before going I wish to hand you my last prescription. You can fill it right at home. Here it is, and permit me to get away immediately, as I have several critical cases on this morning."

I was gone before she could recover from her bewilderment at my sudden giving up of her case or read the prescription. What I gave her read like this:

"Americanus Poisonatus Feminitis.

"Two cuts of mince pie, one glass of milk after breakfast.

"Same after dinner.

"Same after supper.

"Same just before retiring.

"Mix well with chocolate cake, no exercise, no fresh air, no long walks, no dieting.

"Apply in any old way to the heart and stomach [illegible]

Leonard [illegible] NURSERY CO.

(Signed) "Blanck, M.D."

Mrs. Baxter has never had a doctor since, nor spoken of heart disease. She looks splendidly and sleeps eight hours every night.

Baxter offered to pay me twice my bill. I am still a welcome visitor at their home.

CAN HAIR TURN WHITE IN A NIGHT?

A cherished popular belief is that of the sudden blanching of the hair from fright, worry or other severe mental strain. It plays its part in the drama and in fiction, while history records its famous instances. Who has not heard that Marie Antoinette's hair turned white during the night before her execution, or that the deeds and terrors of St. Bartholomew's night blanched the hair of Henry the Fourth? Most of us have wondered how the change could come about as readily as tradition relates; and yet so universal is the belief in this phenomenon that few have the hardihood to doubt it. And now Stieda, a hard-headed German scientist, boldly says that it isn't so at all. This refractory German first proves that such a thing couldn't possibly happen, and then, not satisfied, declares that it never did happen. With equal disregard of folk-lore, history and medical literature, he points the finger of doubt, and challenges many long-deceased historians and physicians to arise and prove their stories.

He claims that when the hair turns white under ordinary conditions it does so in one of two ways. Either the pigmented hairs fall out and are replaced by unpigmented hairs, or, less commonly, pigment-production stops in a growing hair and the colorless portion gradually replaces the darker outer segment. As the growing of a new crop of hair in a single night is beyond the possibilities of even the Seven Sutherland Sisters, Stieda must needs discredit all tales of such miraculous transformation, says The Journal of the American Medical Association. This he does in extenso, taking up the best-known instances of such supposed blanching of hair, and finding them all lacking in support sufficient to meet critical consideration, much less such control as to establish an acceptable scientific demonstration. For example, he doubts the story of Marie Antoinette's sudden loss of hair pigment, stating that although the queen certainly was gray at the time of her execution, yet this was no novelty, for she was also gray nine months before, at the time the king met his sudden end at the hands of the revolutionists.

As for the rest of the reputed cases, many are nothing better than old-wives' tales, while others are examples of credulity substituted for healthy skepticism and careful investigation. The explanation for many is unkind, being simply that the keeper of the jail or dungeon in which the unhappy heroine or hero was confined neglected to furnish his guest's dressing table with the hair-dye to which the latter had been accustomed at home, and that Nature asserted herself before release or execution. Verily the iconoclast respects nothing—not even the gray hairs of royalty.

ABOUT CHILDREN'S CLOTHES.

When making children's clothes there are many little ways in which it pays to leave a chance for enlarging, such as making the waist two or three inches longer than necessary as well as the sleeves and skirt, then the belt can be set up on the waist; the cuffs up on the sleeves, and a wide tuck taken in the hem of the skirt before it is turned down, so these allowances can be let out as needed. A dress that is not very much outgrown can be made large enough by opening the shoulder seam and setting in a band of some material that will match the dress, then a band can be set in the skirt and a belt and cuffs made of the trimming goods. A dress that is entirely outgrown can be made large enough, which is well worth while if the material is still good. Rip the dress apart and press the pieces and wash them if necessary; then cut a new waist and sleeve lining and make them fit the little girl nicely, and trim the dress with plaid goods to match the dress goods. Make a new yoke, belt and cuffs of the plaid, then cut the skirt apart about six inches from the bottom and insert a lining of the width to make the skirt the desired length; then stitch a bias fold of the plaid goods over this lining and it will be as nice as a new dress. A good way to make strong buttonholes in children's clothes is to make the place where the hole is to be cut; then lay a strong thread around the place and fasten it down by bringing the needle up through the fabric on one side of the thread and putting it down on the other, and when you have gone entirely around the thread, cut the button hole and work over the thread. A pale blue woolen dress was made into a beautiful dress for a small girl by ripping it apart and coloring it a rich dark blue with Diamond dye for wool, and a faded light cloth jacket was colored the same shade of blue, and this provided a stylish suit for a very small sum of money. A pretty red sweater that had faded was washed clean and then colored a rich dark red, which made it prettier than when new. It is easy to make a dress from old material with the aid of a good pattern, for each piece can be placed on the cloth and the piecing made to come where it can be concealed by rows of braid or other trimming.—A. M. H.

A GOVERNMENT DOMESTIC SCIENCE SCHOOL.

By Consul P. Emerson Taylor, Stavanger, Norway.

A number of reports from this consulate upon various phases of Norwegian governmental activity designed to benefit the people have been published in Daily Consular and Trade Reports. Among these were reports upon the Bolig (Dwellings) Bank, through which the government makes liberal low-rate loans to the working people for building homes (issue of Aug. 22, 1910); the municipal employment bureau, conducted by the city government in the interest of both workmen and employers of labor (issue of Apr. 18, 1911); government aid to the dairying industry (issue of Sept. 20, 1910), and some others.

Just now the government, in co-operation with the city authorities, is establishing in Stavanger a domestic science school, intended to afford a complete course in housekeeping to young girls over 16 years of age. A course in housekeeping is now a part of the curriculum in the regular public schools of the city, there being a well-furnished modern kitchen and suite of rooms for this purpose in one of the modern public school buildings. This public school course is available only for the girls who have not yet entered the "middle school," which is usually reached about the age of 13 or 14 years. The purpose of the new government school of domestic science is to afford an opportunity for training in housekeeping to those young girls who did not receive such training in their public school course (the domestic science course in the public schools was started only two years ago in its present form). It is especially designed to give a year's training in housekeeping to girls who have been working in factories and have not had adequate training in housekeeping either in school or at home. The course as outlined places special stress upon the economics of housekeeping, including economy in buying as well as in the management of the house.

Equipment and Course of Study.

Six rooms are now being fitted up for the purpose in the basement of the new Vaaland school building, in the third story of which the public school

New Land Opening

Under the

Kuhn California Project in the Sacramento Valley

The canal, drainage and road construction has been completed on the Delevan and Maxwell Units and these lands are now being sold in 10, 20 and 40-acre subdivisions.

The soil is a deep alluvial silt loam and is some of the best in the valley. The main line of the Southern Pacific Railroad passes through the land. Four trains daily each way North and South.

Towns, Schools and Churches Near at Hand

CROPS—All kinds of fruits, including oranges, lemons, cereals, seed, alfalfa, cattle, hogs and chickens.

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The subjects taught include study of foods, domestic economy, cooking, soteriology, social usages, and temperance. Three teachers will be employed to start with. The city council has appointed five members of the school board of the city as managing directors of the school for three years.

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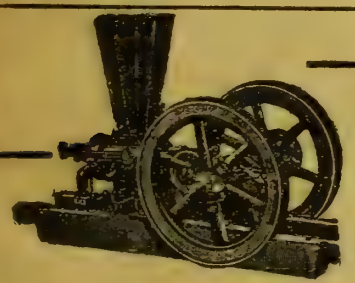
The hours for school work will be 8 a. m. to 2 p. m., and 4 p. m. to 6 p. m. Only pupils will be admitted who have passed their sixteenth year, who have a certificate of good character from the schools or from their employers or guardians, and who present a certificate from a practicing physician that they are in good health.



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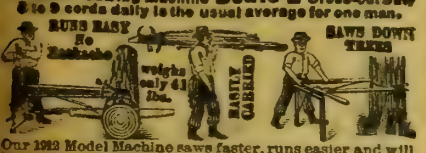

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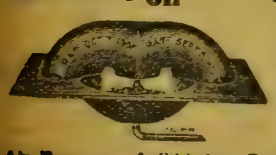

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CHICKEN RECIPES.

Chicken Soup.

An old fowl will do and makes a variety with the meat made into croquettes or pie, or escalloped chicken, or creamed chicken, or chicken with biscuits, or some other way you prefer. The fat must all be skinned off and thin cream or rich milk added as well as a little rice or macaroni.

Croquettes.

Use a tablespoonful each of butter and flour and a cupful of milk made into a thick white sauce. Add minced chicken enough to make it stiff. Allow it to cool and form into shapes and roll in egg and crumbs. I fry them like potato balls.

Escalloped Chicken.

Made by buttering a pan and dusting with crumbs. Add a layer of chicken cut in small pieces and removed from the bones; butter, etc., crumbs, chicken and seasoning, with the crumbs on top. Pour into the pan enough gravy, chicken stock or rich milk to nearly fill to the top of the mixture and bake. An old, old way is to serve the fowl with biscuits.

Chicken with Biscuits.

Bake the biscuits and have them done just as the chicken is all ready to serve. Dish the chicken in the center of a large platter; split the biscuits and make a border, and cover them with gravy. This is for a large family.—Nebraska Farmer.

THE WISE FARMER.

There was a man in our town
And he was wondrous wise,
He knew that if he wanted crops
He'd have to fertilize.

"It's nitrogen that makes things green"
Said this man of active brain;
"And potash makes the good strong straw,
And phosphate plumps the grain.
But it's clearly wrong to waste plant food
On a wet and soggy field;
I'll surely have to put in drains
If I'd increase the yield.

And after I have drained the land
I must plow it deep all over;
And even then I'll not succeed
Unless it will grow clover.
Now acid soils will not produce
A clover sod that's prime;
So if I have a sour soil,
I'll have to put on lime.

And after doing all these things,
To make success more sure,
I'll try my very best to keep
From wasting the manure.
So I'll drain, and lime, and cultivate,
With all that that implies;
And when I've done that thoroughly
I'll manure and fertilize.
—Vivian, College of Agriculture, Ohio.

For white sauces of the ordinary consistency, used for cream toast, creamed vegetables, escalloped dishes and others, a very satisfactory formula is: One cup of milk, one tablespoon each of butter and flour and one-half teaspoonful of salt. Heat the milk slightly in the top of the double boiler. After rubbing together the butter and flour and salt, add a little of the heated milk and mix smoothly. Add the mixture to the rest of the milk in the boiler and cook with the water boiling until well thickened, stirring occasionally to keep it smooth.

THE HOOK-UP-WORM.

"See that measuring worm crawling up my skirt" cried Mrs. Bjenks. "That is a sign that I am going to have a new dress."

"Well, let it make it for you," growled Mr. Bjenks. "And while he's about, have him send a hook worm to do you up the back. I'm tired of the job."—Liverpool Mercury.

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California Cultivator

Volume XXXVII

July to Dec., Inclusive, 1911

NOTE:—The issue of The Cultivator of September 14th incorrectly carried the same pages as the preceding issue, that of September 7th. To distinguish between these in the index, articles in the issue of the 7th are designated by affixing to page number the letter (a); in the same way articles in the issue of the 14th have the letter (b) affixed to page numbers. Thus: "Pruning the Orange" in the issue of September 7th is indexed as appearing on Page 218a, while "Processing Citron" in the issue of September 14th is indexed as 218b.

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FIELD GROWN ROSES.

(Continued from Page 678.)

gone broke," to use a common expression in our state, it was because invariably they had overlooked or did not consider the importance of one or more of the points we have endeavored to impress on you.

ELECTRIC LIGHT ON THE FARM.

(Continued from Page 682.)

ad from a number of companies at a ost not exceeding $400. Adding to his $250 for wiring of buildings, fixres and building to house the plant, makes the complete cost $650. The apacity of the plant may be doubled t an additional cost of about $200.

The engine need be operated for a eriod of about eight hours at interals of from two days to two weeks, epending upon the amount of light sed and the capacity of the plant, he light being drawn between times om the storage battery. During the harging period the plant does not eed constant attention, and a man orking about the farm or the housefe can do all that is necessary at inrvals of about two hours each.

Considering the great advantage hich such plants have, and their lack disadvantage, I hope the time is not r off when they will receive the attntion which they merit, and, as a sult, become at least as common on e farm as the automobile.—F. H. osencrants, Colorado Agricultural ollege.

DIVIDEND NOTICE.

THE GERMAN SAVINGS AND LOAN SOCIETY

(The German Bank)

Member of the Associated Savings Banks of San Francisco,

526 California St., San Francisco

For the half year ending December 31, 1911, a dividend has been declared at the rate of four (4) per cent per annum on all deposits, free of taxes, payable on and after Tuesday, January 2, 1912. Dividends not called for are added to the deposit account and earn dividends from January 1, 1912.

George Tourny, Manager.

ORTHO.

Since seeing the word "Ortho" in big letters on a building in Watsonville, a long time ago, we have often wondered what the word meant. We have also seen the sprays which came from that building and upon the cans have noticed "Ortho" of strange device.

We presume Mr. Luther, who is manager of the institution in question, would describe the word in learned terms in which would appear "hydration" and perhaps some others, but we note the dictionary gives one meaning somewhat separated from chemistry which we will apply at this time. This meaning as given by Webster is "A combining form signifying straight, right, upright, correct, regular, as orthodiagonal, orthodox, orthographic, etc." We do not know that orthodox has anything to do with Ortho sprays, but from information which has come to us from those who have used them, we have belief that they are strictly true to name and are upright and correct in every way.

In conversation with Mr. Luther at Watsonville at the time of the last Apple Show, he referred to one orchardist who had been supplied with Ortho Arsenate of Lead. "Ortho 30" or "Ortho 40," we believe they call it now. He remarked that he and the owner of the orchard stood ready to give $1.00—or was it $2.00?—for each apple in that orchard which possessed a worm. The proffer was not only made to the writer, but to many others at the time of the Apple Show. The search was diligent, but no wormy apples were found. The Ortho Sprays have won, because of not only being most effective, but their use results in less injury to the tree of any spray which has been effective against the dreaded codling moth.

Another poisonous insecticide offered by the Company, which, by the way, is the California Spray Chemical Co., is "Ortho 40," guaranteed to contain 40 per cent arsenious oxide. This insecticide is said to work admirably in dry interior valleys where there is little moisture in the atmosphere, and is one of the best and cheapest insecticides.

Probably the preparation put out in the greatest quantity by this concern is the Ortho Lime Sulphur solution. This is prepared so as to get the highest possible efficiency without injury to the tree. It is made from pure lime and sulphur and its friends promise for it that "It will test higher than any lime-sulphur solution manufactured." It is a clear ruby-colored liquid, weighing 11 pounds to the gallon and containing the highest amount of the sulphur that can remain in solution under all conditions. This solution tests approximately 36 degrees Baume, and is of a strength that for spraying should be diluted 1-11.

KILLS HIS FRIENDS.

Thousands of dollars have been spent by the department of agriculture in the efforts to exterminate insect pests. The lady bug was introduced because of its great liking for the aphis and yet we hear of one man who finding some of the spotted beauties on his favorite apple tree, made it a daily business to kill all he found. not knowing that they were preying upon the aphis that were sucking the life from his tree. It behooves us to study insect life as it does bird life for fear we may destroy those most useful to mankind.—Green's

California Cultivator
Clubbing Price List

For Season 1911-1912

This magazine price list is prepared annually for the convenience and benefit of Cultivator subscribers. The prices given allow our readers the benefit of the lowest figures possible, in return for which, all we require is that to all orders a year's subscription to The Cultivator (class 18) be added at 90c (regular price $1.00 per year).

Find on this sheet a very complete list of the most popular magazines. We can, however, supply any periodical published. The lowest price on any not listed here will be quoted on request. Let us make you a price on any combination you may desire.

Periodicals in any combination may be ordered to the same or different addresses. Foreign or Canadian subscriptions are extra on account of added postage, and prices must be gotten by correspondence. Subscriptions may be either "new" or "renewals (except where otherwise stated in the list), but it is important that this information be given in each case.

Books—Send us a postal for our list of agricultural books which we supply subscribers and which we recommend as most suited to California conditions.

The pricing of various combinations of magazines is a simple matter; all are listed according to class number and this class number multiplied by 5 gives the cost price.

EXAMPLE:

Class No.	Regular Price
23—American Magazine	$1.50
35—The Review of Reviews	3.00
20—Good Housekeeping (or Cosmopolitan	1.50
18—Cultivator	1.00
96×5=$4.80—Club price for all. Amount saved on this club	$1.20

CLASS 7.

American Hen Magazine	$0.50	Any two Class 7 with Cultivator $1.60
American Poultry Journal	.50	
American Poultry World	.50	
Every Woman's Magazine	.50	
Poultry Culture	.50	
Reliable Poultry Journal	.50	

CLASS 8.

American Messenger	$0.50	Any two Class 8 with Cultivator $1.70
Boys' World	.50	
Farm & Fireside	.50	
Farm-Poultry	.50	
Girl's Companion	.50	
Ladies' World	.50	
Northwest Poultry Journal	.50	
Todays Magazine	.50	

CLASS 9.

Inland Poultry Journal	$0.50	One of Class 9 with Cultivator $1.35
McCall's Magazine & Pattern	.50	

CLASS 12.

Designer	$0.75	Any one Class 12 with Cultivator $1.50
Every Day Housekeeping	.75	
Home Needlework	.75	
Modern Priscilla (Needlework)	.75	
New Idea Woman's Magazine	.75	
Young People's Weekly	.75	

CLASS 15.

Architect, Builder and Contractor	$1.00	Any one Class 15 with Cultivator $1.65
Baby	1.00	
Business & Bookkeeper	1.00	
Concrete	1.00	
Motor Print	1.00	
Northwestern Agriculturist	1.00	
Watson's Magazine	1.00	

CLASS 16.

Amateur Sportsman	$1.00	Any one Class 16 with Cultivator $1.70
Black Cat	1.00	
Cooking Club Magazine	1.00	
Fly	1.00	
Health	1.00	
Judge's Library (A magazine of fun)	1.00	
Judge's Quarterly	1.00	
Kindergarten Primary Magazine (new)	1.00	
Orange Judd Farmer	1.00	
Prof. & Amateur Photography	1.00	
Uncle Remus Home Magazine	1.00	
Woman's Journal (new)	1.00	

CLASS 17.

American Bee Journal	$1.00	Any one Class 17 with Cultivator $1.75
American Boy	1.00	
American Baby	1.00	
American School Board Journal	1.00	
American Primary Teacher	1.00	
Boston Cooking School Magazine	1.00	
Boy's Magazine	1.00	
Camera (Previous to Jan. 1st, 1912. See Class 23)	1.00	
Camera Craft (new)	1.00	
Children's Magazine (new)	1.00	Any two Class 17 with Cultivator $2.60
Kindergarten Review	1.00	
Little Folks (new)	1.00	
Musical Observer	1.00	
Modern Electrics	1.00	
Motor Field	1.00	
Nautilis (new	1.00	
Popular Electricity (Previous to Jan. 1st, 1912)	1.00	
Pictorial Review	1.00	
Success-National Post	1.00	

CLASS 35.

Current Literature	$3.00	Any one Class 35 with Cultivator $2.65
Lippincott's	3.00	
Review of Reviews	3.00	
Survey (new)	2.00	
Trained Nurse	2.00	
Travel	3.00	
World Today	3.00	
Youth's Companion (Previous to Jan. 1st, 1912. See Class 40)	1.75	

CLASS 40.

Recreation	$3.00	One of Class 40 with Cultivator $2.90
St. Nicholas (new)	3.00	
Youth's Companion (After Jan. 1st, 1912)	2.00	

CLASS 20.

Automobile Topics	$2.00	Any one Class 20 with Cultivator $1.90
Cosmopolitan	1.50	
Good Housekeeping	1.50	
Harper's Bazaar	1.25	
Hoard's Dairyman	1.00	
McCall's 3 yrs. & 3 patterns	1.50	
Munsey's	1.00	
Opportunity	1.50	

CLASS 22.

Out West	$1.50	Any one Class 22 with Cultivator $2.00
Popular Educator	1.25	
Primary Education	1.25	
Teacher's Magazine	1.25	

CLASS 23.

American Magazine	$1.50	Any one Class 23 with Cultivator $2.05
Breeders' Gazette	1.75	
Camera (After Jan. 1st, 1912)	1.50	
Etude (For all music lovers	1.50	
Everybody's Magazine	1.50	
Field & Stream	1.50	
Garden Magazine	1.50	
Good Health	1.50	
Housekeeper	1.50	
McClure's Magazine	1.50	
Metropolitan Magazine	1.50	
Musician	1.50	Any two Class 23 with Cultivator $3.20
National Magazine	1.50	
Pacific Monthly	1.50	
Pearson's Magazine	1.50	
Physical Culture	1.50	
Popular Electricity (After Jan. 1st, 1912)	1.50	
Sunset Magazine	1.50	
Technical World	1.50	
Woman's Home Companion	1.50	
Yachting	2.00	

CLASS 25.

Farm Journal (10 yrs.)	$1.50	Any one Class 25 with Cultivator $2.15
Overland Monthly	1.50	
Violinist	1.50	

CLASS 30.

Ladies' Home Journal	$1.50	Any one Class 30 with Cultivator $2.40
Ladies' World, Modern Priscilla and Pictorial Review	2.25	
Popular Mechanics	1.50	
Saturday Evening Post	1.50	

CLASS 47.

Automobile	$3.00	Any one Class 47 with Cultivator $3.25
Bookman	2.50	
Forest & Stream	3.00	
Motor Age	3.00	

CLASS 50.

American Homes & Gardens (new)	$3.00	Any one Class 50 with Cultivator $3.40
Bit & Spur	3.00	
Education (new)	3.00	
Outing Magazine	3.00	
Scientific American (new)	3.00	

CLASS 70.

Country Life in America	$4.00	Any one Class 70 with Cultivator $4.40
Harper's Magazine	4.00	
Harper's Weekly	4.00	
Keramic Studio and 4 Color Studies (new)	4.00	
North American Review	4.00	
Vogue	4.00	

MISCELLANEOUS.

Ainslee's	$1.80	Class 27
American Motherhood	1.00	Class 18
American Photography	1.50	Class 24
Century Magazine	4.00	Class 80
Cosmopolitan, Good Housekeeping, and World Today (to one address)	6.00	Class 58
Craftsman	3.00	Class 53
Delineator	1.50	Class 21
Dress	3.00	Class 37
Electrician & Mechanic	1.50	Class 24
Hints (The entertainment magazine)	1.00	Class 10
Judge	5.00	Class 95
Leslie's Weekly	5.00	Class 95
Mother' Magazine	.75	Class 10
Musical Courier	5.00	Class 90
Outlook	3.00	Class 60
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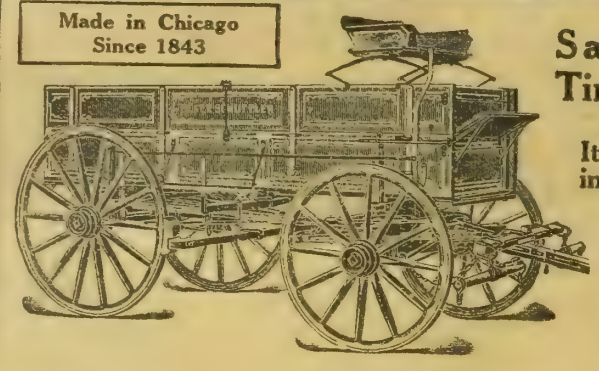

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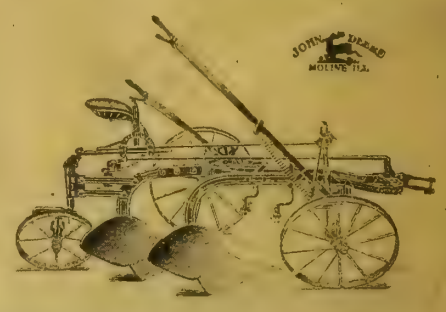

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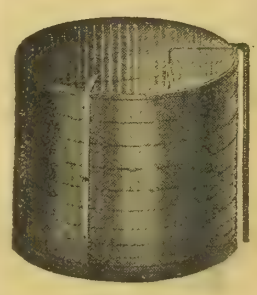

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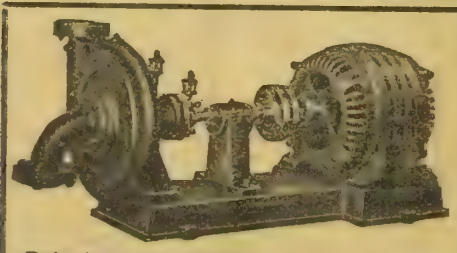

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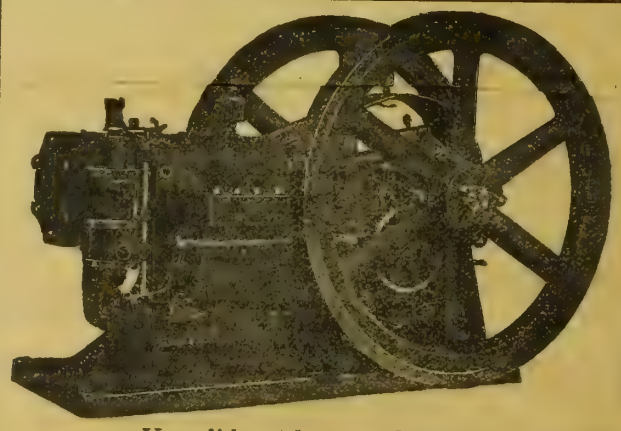

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